PAGE(S) MISSING

108133

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

May 5, 1997

Environmental Design Branch
Environmental Division

Mr. Antonio Peña
Texas Natural Resource Conservation Commission (TNRCC)
Petroleum Storage Tank Division
Responsible Party Remediation Section
MC137
P.O. Box 13087
Austin, Texas 78753

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MAY 26 1997
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RPR

Dear Mr. Peña:

Enclosed is the original risk-based assessment for former Gary Air Force Base (Gary Job Corps Center), Leaking Petroleum Storage Tank (LPST) number 108133. It appears further investigations will need to be conducted at this site based on TNRCC guidance dated October 1995 for leaking petroleum storage tank risk-based assessments. Funds have been scheduled by the Fort Worth District, Corps of Engineers, for a contract award no later than June 30, 1997, for the supplemental work. Actual work should be initiated in late June or early July, provided this site is determined to need further investigations under the new LPST closure guidance dated February 10, February 21, and March 6, 1997.

Comments concerning the assessment report should be directed to Mr. Randy Niebuhr of our Environmental Design Branch, telephone 817/978-3223, extension 1642.

Sincerely,

for Deborah C Perrin
Mark E. Simmons, P.E.
Chief, Environmental Design Branch

Enclosure

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TEXAS NATURAL RESOURCE CONSERVATION COMMISSION
PETROLEUM STORAGE TANK DIVISION
ASSESSMENT REPORT FORM

This form should only be submitted when all information has been obtained as outlined in the document entitled *Guidance for Risk-Based Assessments at LPST Sites in Texas.* If the Table of Contents (page 2) is not fully completed, the TNRCC will return this form to the responsible party without review. This document must not be altered in any manner. **Requested information denoted with "*" is beyond the minimal requirements for a site assessment as defined by 30 TAC 334.78(a)(5).** Attach a workplan(s) and preapproval request(s) for those activities on sites eligible for reimbursement for the next appropriate activity.

LPST ID No: 108133 Facility ID No: 22732 Site priority: 4.1

Facility Name: Gary Job Corps Center (Former Gary Air Force Base)

Facility Address: Highway 21 East

City: San Marcos State: TX Zip: 78667

RP Name: US Army Corps of Engineers

RP Address: P.O. Box 17300

City: Fort Worth State: TX Zip: 76102

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I certify that all work has been conducted in accordance with accepted industry standards/practices and adhered to TNRCC guidance and rules. I certify that I am aware that misrepresentation of any of the above claims is a violation of 30 TAC 33.4453(b)(1)(E) and that this violation may result in the disciplinary actions set forth in 30 TAC 334.453 and or 334.463 and 334.465.

Maxim Technologies (Registered Corrective Action Specialist) 00106 (RCAS Reg. No.) 11/97 (Expiration date)

John S. Andrews (Signature) 1/3/97 (Date)

(214) 631-2700 (Telephone #) (214) 920-1818 (FAX #)

John S. Andrews (Project Manager) 001123 (CAPM Reg. No.) 10/10/97 (Expiration date)

John S. Andrews (Signature) 12/3/97 (Date)

(214) 920-1888 (Telephone #) (214) 920-1818 (FAX #)

By signature below, I certify that I have reviewed this report for completeness.

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(Name of Responsible Party Contact) (Company)

(Signature) (Date)

(Telephone #) (FAX #)

mailing address: TNRCC/PST Division/RPR Section
MC 137
P.O. Box 13087
Austin, TX 78711-3087

LPST ID: 108133
Site Name: Former Gary Air Force Base
Site Location: Gary Job Corps, Hwy 21 East, San Marcos, Caldwell County

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Abbreviations		26	
			(■) Enclosed
Attachment 1	Site plan illustrating location of entire former/current UST/AST system(s), subsurface utilities, limits of excavation, system removal or repair, sampling points, and surface cover		■
Attachment 2	Vicinity map or aerial photograph illustrating surrounding land use and receptors identified within a 500-foot radius		■
Attachment 3	USGS topographic map with plotted water well locations		■
Attachment 4	Copies of completion details and water well drillers reports for located wells (0.5 mile radius)		■
Attachment 5	Site plan(s) illustrating former/current UST/AST system(s) and all (i.e., soil, groundwater, vapor, surface water) sampling points		■
Attachment 6	Soil contaminant concentration maps		■
Attachment 7	Groundwater gradient map		■ NA □
Attachment 8	Groundwater contaminant concentration maps		□ NA ■
Attachment 9	Biodegradation Indicator Distribution Map*		□ NA ■
Attachment 10	Soil Gas Survey Maps*		□ NA ■
Attachment 11	Vapor Contaminant Concentration Map		■
Attachment 12	Surface Water Contaminant Concentration Map		□ NA ■
Attachment 13	Surface Water Flow Map		■ NA □
Attachment 14	Soil boring logs to include: lithology, field screening, sample locations, well completion details, TNRCC Form 0019		■
Attachment 15	Summary table of all soil, groundwater, surface water, and vapor analytical results, including from all sampling points, and tank removal or repair activities		■
Attachment 16	Summary tables of all gauging data, water level data, NAPL thickness and corrected water level data and well screen interval (if applicable)		■ NA □
Attachment 17	Copies of all analytical reports including complete chain-of-custody and quality assurance/quality control documentation		■
Attachment 18	Copies of manifests, waste receipts, or other documents necessary to document waste disposition		■
Attachment 19	Photographic documentation		■
Attachment 20	Proposal for next appropriate action and/or Site Closure Request		■

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RPB

LPST ID: 108133
Site Name: Former Gary Air Force Base
Site Location: Gary Job Corps, Hwy 21 East, San Marcos, Caldwell County

EXECUTIVE SUMMARY

Check all applicable boxes.

UST/AST System Status: ☐ Active ■ Permanently Removed from Service
☐ Temporarily Out of Service ☐ Temporarily Indefinitely Out of Service (Variance Due Date:_____)

Current site land use:
☐ vacant ■ indus./coml. ☐ residential ☐ agricultural ☐ recreational ☐ UST/AST Facility

Sources of Release: ■ tank(s) ☐ piping ☐ spills ■ dispenser ☐ Other:_____

Substance Released:
☐ gasoline ☐ diesel ☐ waste oil ☐ hydraulic fluid ☐ AV gas ■ jet fuel ☐ Other: lube oil, sovents

Site Assessment History:
■ Preliminary/LSA ☐ Groundwater Monitoring ☐ Remedial Action ☐ Emergency Response

Affected environmental media: ☐ surficial soil (<2 ft. BGS) ■ soil (2 to 15 ft. BGS) ■ soil (>15 ft. BGS)
■ groundwater ☐ surface water ☐ air

Identified affected receptors: ☐ water wells ☐ basements/structures ☐ habitat ☐ building ☐ underground utilities
☐ surface water ☐ exposed contaminated soil ☐ Other Distance from site (ft.):_____

Samples collected ■ yes ☐ no Abatement initiated: ■ yes ☐ no Type: Permanent Removal

Identified potential receptors: ☐ water wells ☐ basements/structures ☐ habitat ☐ building ■ underground utilities
☐ surface water ☐ exposed contaminated soil ☐ Other Distance from site (ft.):_____

Depth to first encountered groundwater (ft.) BGS: ☐ >50 ■ 15-50 ☐ 0-15

Presence of NAPLs (ft.):
☐ sheen ☐ 0.1-0.5 ft. ☐ 0.5-2 ft. ☐ 2-5 ft. ☐ >5 ft. ■ none Recovery Initiated: ☐ yes ■ no

Current NAPL extent: ☐ on-site ☐ off-site

Dissolved-phase extent: ☐ on-site ☐ off-site ■ unknown

Groundwater beneficial use category:
☐ Cat. I ■ Cat. II ☐ Cat. III ☐ Cat. IV ☐ Soils only affected, regional beneficial use can not be established.

Contaminants of Concern Exceed Target Concentrations of Affected media:

Soil (Worksheets 7.0, 11.1-5):	■ yes ☐ no
Groundwater (Worksheet 8 & 11.1-4):	■ yes ☐ no
Vapors (Worksheet 9.0):	☐ yes ■ no
Surface Water (Worksheet 10.0):	☐ yes ■ no

Site Priority: 1.____ 2.____ 3.____ 4.__1__

Recommended Actions:

☐ a) Affected Receptors Identified - Propose additional corrective action and/or monitoring program.

☐ b) Site does not exceed Plan A criteria - Submit site closure request form.

☐ c) Site does not exceed Plan A criteria - Propose verification groundwater monitoring program.

☐ d) Site exceeds Plan A criteria - Propose corrective action to achieve Plan A criteria.

■ e) Site exceeds Plan A criteria - Propose Plan B risk assessment and/or evaluation.

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SITE DESCRIPTION

Location Description

Facility Name: Former Gary Air Force Base

Address: Hwy 21 East, Gary Job Corps Center

Cross-Street: E. Kane Avenue

City: San Marcos

County: Caldwell

Current Site Water Supply: City of San Marcos

Notes:

Topography

Terrain: ■ Flat ☐ Steep ☐ Variable

Ground Surface Slope
Direction Southeast Grade (ft./ft.) 0.005 ft/ft

Other Comments:

Discuss any significant onsite or adjacent significant topographic feature.

A small surface storm drainage ditch is located about 700 ft. east of the site. This flows in a southerly direction and into Hemphill Creek.

Local Climate:

Average Annual Rainfall (in.): 32

Within 100 Year Floodplain: ☐ yes / ■ no

Other Comments:

Discuss recent (i.e., within the past year) extreme climatic changes. Discuss engineered modifications to floodplain status or designation.

.T ID: 108133

LAND USE

PAST, CURRENT, AND FUTURE USE (check all that apply)

- Past use of site:
  - ■ Commercial/Industrial
  - ☐ Residential
  - ☐ Agricultural
  - ☐ Recreational
  - ☐ Vacant
  - ■ UST/AST Facility
- Past Predominant Land Use of the Area:
  - ■ Commercial/Industrial
  - ☐ Residential

Describe: Former Gary Air Force Base, Gary Job Corps-Department of Labor

- Current use of site:
  - ■ Commercial/Industrial
  - ☐ Residential
  - ☐ Agricultural
  - ☐ Recreational
  - ☐ Vacant
  - ☐ UST/AST Facility
- Current Predominant Land Use of the Area:
  - ■ Commercial/Industrial
  - ☐ Residential
- Type of Residential Area:
  - ☐ Minority/Low Income ☐ Non-minority/Low Income
  - ☐ Other

Describe: Gary Job Corps-Department of Labor

- Future use of site:
  - ■ Commercial/Industrial
  - ☐ Residential
  - ☐ Agricultural
  - ☐ Recreational
  - ☐ Vacant
  - ☐ UST/AST Facility
- Future Predominant Land Use of the Area:
  - ■ Commercial/Industrial
  - ☐ Residential

Describe: Gary Job Corps-Department of Labor

List all facilities (not limited to PST regulated) within 500 feet of the site that could be a source of contaminants:

Facility Name & Type: San Marcos Mun. Airport
Address: Highway 21 East
Facility No.: NA
LPST ID No. NA
Owner/Operator: City of San Marcos

Facility Name & Type: NA
Address: NA
Facility No.: NA
LPST ID No. NA
Owner/Operator: NA

Facility Name & Type: NA
Address: NA
Facility No.: NA
LPST ID No. NA
Owner/Operator: NA

Other Comments:

Additional facilities may be listed and noted on Attachment 2.

LPST ID: 108133

WATER WELL INVENTORY

SUMMARY OF WELLS WITHIN 0.5 MILE RADIUS OF THE SITE

			Downgradient Direction		
	Total No.	Active No.	Total No.	Active No.	No. Screened in Affected Zone
Public/Municipal:	0	0	0	0	0
Industrial:	0	0	0	0	0
Domestic:	0	0	0	0	0
Agricultural:	0	0	0	0	0

POTENTIAL RECEPTOR POINTS

	Closest Downgradient Water Well	Closest Downgradient Well Screened Within Affected Zone
Well No./Designation:	NA	NA
Distance from Site (ft.):	NA	NA
Total Well Depth (ft.):	NA	NA
Current Use of Water:	NA	NA
Screened Interval below Ground Surface (ft):	NA	NA
Year Constructed:	NA	NA

Comments: *(Include discussion of any ordinances which prevent or influence the future installation of water wells at the site or surrounding area.)*

LPST ID: 108133

RECEPTOR SURVEY

Underground Utility Survey

Nearest Underground Utility
Name: NA
Type: Product Piping
Depth of Utility: 15'
Distance & Direction
From Affected Zone: 40 ft. Southwest

Nearest Downgradient Utility
Name: NA
Type: Product Piping
Depth of Utility: 15'
Distance & Direction
From Affected Zone: 40 ft. South

Other Comments:

Discuss other receptors and indicate on Attachment 2. If affected discuss abatement measures.

The abandoned product piping begins at the largest tankhold, runs southwest several feet, then turns in a westerly direction, parallel and adjacent to East Kane Avenue. The final destination of the piping is the location of three former pump islands, which were located north of Building 9-350. During the tank removal, testing was performed for the soils located along the product piping, the results of these tests showed no impact to the native soils. The piping was grouted and abandoned in place.

Building Survey

Nearest Building
Name: Bldg 9-361
Type: Vocational Education
Distance & Direction
From Affected Zone: 80 ft. west

Nearest Downgradient Building
Name: Bldg 10-350
Type: Education Administration
Distance & Direction
From Affected Zone: 100 ft. southeast

Other Comments:

Discuss nearest and other receptors and indicate on Attachment 2. Buildings should include residences, schools, day care facility, nursing home, etc.

The buildings situated near the site are Building 9-361, Vocational Education; Building 10-350, Storage-Support; and Building 10-351, Administration. These buildings are part of Gary Jobs Corps, United States Department of Labor.

Surface Water Hydrology

Nearest Surface Water
Name: NA
Type: Drainage Ditch
Distance & Direction
From Affected Zone: 700 ft. east

Impacted Surface Water
Name: NA
Type: NA
Distance & Direction
From Affected Zone: NA

Nearest Downgradient Surface Water
Name: Hemphill Creek
Type: Creek
Distance & Direction
From Affected Zone: 1 Mile East

Other Comments:

If affected complete Worksheet 10.0. Describe potential for affected storm water or groundwater discharge to surface water feature.

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HABITAT SURVEY

Presence of Sensitive Habitat
Site located within or affects a sensitive or protected habitat? ☐ yes (explain below) ■ no

Name: NA
Location: NA

Discussion: *Provide the habitat type (wildlife sanctuary, wetlands, etc.), condition, regulatory authority, and other information relative to habitat characterization.*

SUMMARY AND RECOMMENDED ACTION

Observed or Potential Impacts	- Recommended Action
☐ None observed or anticipated	- No action required
■ Potential for Significant Impact	- Additional Corrective Action Required (See Attachment 20)
☐ Significant Impact Observed	- Additional Corrective Action Required (See Attachment 20)

Comments: *Discuss any emergency abatement and continued corrective action.*

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SITE ASSESSMENT HISTORY

SUMMARY OF PREVIOUS SITE ACTIVITIES

Typical site activities to be recorded include:
- Preliminary/Limited/Comprehensive Site Assessment
- Emergency Response • Risk/Exposure Assessment • Remedial/Corrective Actions

Types of sampling to be included: • Soil • Groundwater • Surface Water • Vapors

Date Completed	Description of Activity	Sampling and Testing	Result/Impact/Target Cleanup
April 20, 1994	4 UST's removed.	Soil: BTEX, TPH, total lead.	Native soil impacted, overexcavation ordered.
April 30, 1994	Structure housing associated pumps removed, and area below excavated	Soil: BTEX, TPH, total lead.	Native soils impacted.
June 9, 1994	Overexcavations completed.	Soil: BTEX, TPH, total lead.	Native soils near tankhold still impacted. LSA ordered.
July 1, 1994	Excavation lined with impermeable liner, backfilled and restored to original grade. Grass planted.	None.	None.
May 17, 1996	LSA performed.	Soil: BTEX, TPH, PAH Water: BTEX, TPH, PAH	Soils and groundwater impacted.

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UST/AST SYSTEM CHARACTERIZATION

Release Information

UST/AST System Status:
☐ Active ■ Permanently Removed From Service
☐ Temporarily Out of Service
☐ Temporarily/Indefinitely Out of Service (Due Date:_____)

Method of release discovery:
■ UST Removal ☐ Release Detection Equipment
☐ Divestiture Assessment ☐ Inventory Control
☐ System Tightness Testing ☐ Other_____

Substance released (check all that apply):
☐ Gasoline ☐ Diesel ☐ Waste Oil
☐ AV Gas ■ Jet Fuel ☐ Hydraulic Fluid
☐ Other: _____

Source of release(s): Date Discovered:
☐ Spills/overfills _____
☐ Piping _____
■ Dispenser April 30, 1994
■ Tank April 20, 1994
☐ Other _____

Other Comments:

Describe the measures taken to abate the release:

The tanks, pump pit and pump islands were removed from service, overexcavations removed some of the contaminated soils.

Removal Information

Date(s) of removal(s): April 20, and April 30, 1994
Type of removal:
■ Removal from the ground ☐ Closure in place
Water in tankhold during excavation? ☐ yes ☐ no
Depth of water in tankhold (BGS):
☐ <5 ft. ☐ 5-10 ft. ☐ 11-15 ft. ☐ None
NAPL: ☐ yes ■ no Thickness (ft.): NA
Water Evacuated from tankhold: ☐ yes ■ no
Volume (gal.): _____
Groundwater recharged into tankhold: ■ yes ☐ no
Depth (ft. BGS): 22 ft.
Status of excavation(s):
☐ Open with water ☐ Open/dry
■ Backfilled with impervious cover
☐ Backfilled with no impervious cover
Type of fill material:
■ Untreated backfill ☐ Treated backfill ☐ Other
☐ Clean fill - gravel ■ Clean fill - sandy/clay

Other Comments:

Provide the maximum contaminant concentrations milligrams per kilograms (mg/kg) of untreated backfill returned to the tankhold(s): Benzene < 0.6 *TEX* <1.8 *TPH* 480 *OTHER* Total Lead 32 *. If a new UST/AST system was installed describe & indicate on Attachment 1.*

Maximum level of contamination detected in native soils upon completion of removal/repair (mg/kg):

Chemical of Concern	Sample Date	Sample Location/Depth	Laboratory Method Detection Limit	Maximum Concentration (mg/kg)
Benzene	6/9/94	Tank 08, bottom of hold	0.1	4.35
Toluene	6/9/94	Tank 08, bottom of hold	0.1	7.96
Ethylbenzene	6/9/94	Tank 08, bottom of hold	0.1	13.38
Total Xylenes	6/9/94	Tank 08, bottom of hold	0.1	57.35
TPH	6/9/94	Tank 08, bottom of hold	5	16705
Metals	NA	NA	NA	NA
VOC	NA	NA	NA	NA
Other Total Lead	4/20/94	Tank 08, northwest wall	0.1	38

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SOIL ASSESSMENT

SOIL DATA COLLECTION AND EVALUATION

Number of soil sampling points: Eight (8)

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%

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.): Ten (10)

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

Maximum depth of contamination exceeding appropriate Plan A risk-based levels: 5 ft. BGS

*Estimated volume of soil exceeding Plan A target concentration (yd^3): _____

*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	5/16/96	17	B5-5417	0.001	0.630	0.74
Toluene	5/16/96	17	B5-5417	0.001	1.700	503
Ethylbenzene	5/16/96	20.5	B8-8720	0.001	44.000	835
Total Xylenes	5/16/96	20.5	B8-8720	0.001	25.00	968
TPH	5/16/96	20.75	B6-6520	10	6300	NA
Total Lead	NA	NA	NA	NA	NA	NA
Naphthalene	5/16/96	20.5	B8-8720	0.150	6.200	389
Other: Benzo(B)Fluoran.	5/16/96	5	B8-8705	2.2	5.9	0.877
Other_____				NA		

* 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.

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* Geotechnical soil parameters:

Parameter	Result	Depth	Location/Sample ID	Method of Determination
Dry Bulk Density (g/m^3):	1.54E6	23-24 ft	B-6 (23.0-24.0')	ASTM D 5084-90
Effective Porosity (%):	42.6	23-24 ft	B-6 (23.0-24.0')	ASTM D 5084-90
Fraction Organic Carbon (g/g):	0.14	23-24 ft	B-6 (23.0-24.0')	Walkey-Blk
Intrinsic Permeability (cm^2):	9.98E-14	23-24 ft	B-6 (23.0-24.0')	ASTM D 5084-90
Water Content (cm^3/cm^3):	0.292*	23-24 ft	B-6 (23.0-24.0')	ASTM D 5084-90
Other	NA	NA	NA	NA

* Biodegradation Indicators:

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

* Moisture fraction.

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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.)	27.8	
Aquifer type (Perched, confined, unconfined)	Perched	
*Estimated Aquifer thickness (ft.)		
*Water level fluctuations (± ft.)	Unknown	
Gradient (ft./ft.)/Direction	Unknown/Unknown	/
*Saturated hydraulic conductivity (ft./day)		
*Approximate well yield (gpd)		
Lithology	Sandy Gravel	
Geologic Formation	Leona Formation	
Major/minor aquifer name	NA - Perched	
Total dissolved solids (mg/ℓ)	530	
Confining layer depth (ft. BGS)	30	
Confining layer thickness (ft.)	5	

Beneficial Groundwater Use Categories

Mark the potential beneficial use category for the impacted zone and indicate the selection criteria. Complete the appropiate worksheet (11.1-5) for the Category indicated.

☐ Category I	■ Category II	☐ Category III	☐ Category IV
☐ Impacted or threatened water supply well(s)‡	■ Affected groundwater zone TDS <3,000 ppm, and no beneficial use† is documented within 0.5 miles of the site.	☐ Affected groundwater zone TDS 3,000 - 10,000 ppm, and no beneficial use† within 0.5 miles of the site.	☐ Affected groundwater zone TDS >10,000 ppm, and no beneficial use† is documented within 0.5 miles of the site.
OR ☐ Affected groundwater zone TDS <3,000 ppm, and water well(s)‡ or water supply spring within 0.5 miles of the site. OR ☐ Soils only affected. Regional groundwater beneficial use† cannot be established.	OR ☐ TDS 3,000 - 10,000 ppm, and beneficial use† is documented within the 0.5 miles of the site.		OR ☐ 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:	Boring 1/MW-1	
Number of permanent monitoring wells:	MW-1	
Static water levels above screened intervals: ☐ yes ■ no		

LPST ID: 108133

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	5/16/96	G1-1234	0.001	1.500	0.0294
Toluene	5/30/96	MW1-7471	0.001	0.009	7.3
Ethylbenzene	5/16/96	G1-1234	0.001	0.170	3.65
Total Xylenes	5/16/96	G1-1234	0.001	<0.005	73
MTBE	NA	NA	NA	NA	NA
TPH	5/16/96	G1-5234	0.5	7	NA
Naphthalene	5/30/96	MW1-7471	0.09	0.17	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.):	NA	NA	NA	NA
	NA	NA	NA	NA
	NA	NA	NA	NA
	NA	NA	NA	NA

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

Volume recovered to date (gals.): NA

*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 CO_2, dissolved CH_4, Fe, SO_4, or other alternate electron acceptors on isoconcentration map. (Attachment 9)

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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 ■ calculated[1]

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
B5-5417	Boring 5	17 ft.	1.3	1437	0.0452	NA
B8-8720	Boring 8	20.5ft.	1.0	75		7.0836 EB
B5-5417	Boring 5	17 ft.	1.2	1737		0.8340 T
B8-8720	Boring 8	20.5 ft.	1.0	75		15.85 X

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:

EB = Ethyl benzene
T = Toluene
X = Xylene

Calculations on following page.

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

Site Specific Soil Vapor Calculations

Sample ID	Sample Depth	Contaminant	Bulk Soil Concentration	Soil Water Partition Coeffecient	Organic Carbon Partition Coefficient	Soil Organic Carbon Fraction	Dry Soil Bulk Density	Total Soil Porosity	Water Content	Air Fill Soil Porosity	Henry's Constant (Demensional Form)	Henry's Constant (Unitless)	Leachate Conc.	Target Soi Conc.	Calculated Soil Vapor Concentration
			C_t	K_d	K_{oc}	F_{oc}	B	Φ	Φ_w	Φ_a	H	H'	C_l	C_t	C_a
B5-5417	17'	Benzene	0.63	0.116	83	0.0014	1.54	0.419	0.1	0.319	0.00559	0.2324	0.5	0.1146	0.6385
B8-8720	20.5'	Ethyl benzene	44	1.54	1100	0.0014	1.54	0.419	0.1	0.319	0.00643	0.2673	70	116.2212	7.0836
B5-5417	17'	Toluene	1.7	0.42	300	0.0014	1.54	0.419	0.1	0.319	0.00637	0.2648	100	53.9787	0.8340
B8-8720	20.5'	Xylenes	25	0.336	240	0.0014	1.54	0.419	0.1	0.319	0.00704	0.2927	1000	461.5560	15.8514

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SURFACE WATER ASSESSMENT

SURFACE WATER DATA AND EVALUATION

Surface water(s) affected: ☐ yes ■ no Name:_____ 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.): NA

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

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): NA

Average depth of surface water (ft.): NA

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	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA
Total Xylenes	NA	NA	NA	NA	NA
MTBE	NA	NA	NA	NA	NA
TPH	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA
Other_____	NA	NA	NA	NA	NA
Other_____	NA	NA	NA	NA	NA

† 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.

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PLAN A EVALUATION

CATEGORY I: Soil and Groundwater Target Cleanup Level Determination

- Complete this worksheet for Category I sites. Indicate the maximum detected concentration for the chemicals of concern.
- If groundwater is >15 feet BGS, calculate groundwater protective soil concentrations using the equilibrium partition equation on Worksheet 11.5 (when site specific geotechnical parameters have been analyzed).
- Check the box for each compound that exceeds the target concentrations. If any boxes are checked, further corrective action (i.e., monitoring, Plan B, CAP) will be required.
- If other chemicals of concern are present but not listed, refer to *Risk-Based Corrective Action for Leaking Storage Tank Sites (RG-36)*.

Chemical of Concern	GROUNDWATER (mg/ℓ)		SOIL (mg/kg)				
			Depth to Affected Soil ≤15 ft.		Depth to Affected Soil >15 ft.		
	TARGET CONC.	MAX. LAB. ANALYZED CONC.	TARGET CONC.	MAX. LAB. ANALYZED CONC.	TARGET CONC.	MAX. LAB. ANALYZED CONC.	GW >15 ft. CALC. SOIL CONC. C_T
BENZENE	☐ 0.005		☐ 0.13		☐ 0.13		
ETHYLBENZENE	☐ 0.7		☐ 160		☐ 160		
TOLUENE	☐ 1		☐ 69		☐ 69		
XYLENE	☐ 10		☐ 568		☐ 568		
ACENAPHTHENE	☐ 2.19		☐ 314		☐ 314		
ANTHRACENE	☐ 11		☐ 13		☐ 13		
BENZO(A)ANTHRACENE	☐ 0.000117		☐ 0.877[H]		☐ 3.2		
BENZO(B)FLUORANTHENE	☐ 0.000117		☐ 0.877[H]		☐ 13		
BENZO(K)FLUORANTHENE	☐ 0.00117		☐ 8.77[H]		☐ 47		
BENZO(A)PYRENE	☐ 0.0002		☐ 0.0877[H]		☐ 220		
CHRYSENE	☐ 0.0117		☐ 7.2		☐ 7.2		
DIBENZO(A,H)ANTHRACENE	☐ 0.0000117		☐ 0.0877[H]		☐ 7.7		
FLUORANTHENE	☐ 1.46		☐ 156		☐ 156		
FLUORENE	☐ 1.46		☐ 247		☐ 247		
INDENO(1,2,3-CD)PYRENE	☐ 0.000117		☐ 0.877[H]		☐ 17		
NAPHTHALENE	☐ 1.46		☐ 389		☐ 389		
PYRENE	☐ 1.1		☐ 99		☐ 99		
OTHER	☐		☐		☐		
OTHER	☐		☐		☐		

H - Value represents health-based concentration

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PLAN A EVALUATION

CATEGORY II: Soil and Groundwater Target Cleanup Level Determination

- Complete this worksheet for Category II sites. Indicate the maximum detected concentration for the chemicals of concern.
- If groundwater is >15 feet BGS, calculate groundwater protective soil concentrations using the equilibrium partition equation on Worksheet 11.5 (when site specific geotechnical parameters have been analyzed).
- Check the box for each compound that exceeds the target concentrations. If any boxes are checked, further corrective action (i.e., monitoring, Plan B, CAP) will be required.
- If other chemicals of concern are present but not listed, refer to *Risk-Based Corrective Action for Leaking Storage Tank Sites (RG-36)*

Chemical of Concern	GROUNDWATER (mg/ℓ)		SOIL (mg/kg)				
			Depth to Affected Soil ≤15 ft.		Depth to Affected Soil >15 ft.		
	TARGET CONC.	MAX. LAB. ANALYZED CONC.	TARGET CONC.	MAX. LAB. ANALYZED CONC.	TARGET CONC.	MAX. LAB. ANALYZED CONC.	GW >15 ft. CALC. SOIL CONC. C_T
BENZENE	■ 0.0294	1.500	□ 0.74	0.067	□ 0.74	0.630	0.115
ETHYLBENZENE	□ 3.65	0.170	□ 835	0.580	□ 835	44.000	116
TOLUENE	□ 7.3	0.009	□ 503	0.660	□ 503	1.700	54
XYLENE	□ 73	<0.005	□ 968	2.100	□ 968	25.000	91
ACENAPHTHENE	□ 2.19	<0.010	□ 314	<2.500	□ 314	<5.000	22.25
ANTHRACENE	□ 11	<0.020	□ 13	0.480	□ 13	<2.2	0.885
BENZO(A)ANTHRACENE	□ 0.00117	<0.014	□ 0.877[H]	0.780	□ 32	<1.350	11
BENZO(B)FLUORANTHENE	□ 0.00117	<0.012	■ 0.877[H]	5.900	□ 129	<1.100	10.8
BENZO(K)FLUORANTHENE	□ 0. 0117	<0.014	□ 8.77[H]	3.100	□ 47	<1.200	3.311
BENZO(A)PYRENE	□ 0.000117	<0.006	□ 0.0877[H]	<0.550	□ 220	<1.100	23
CHRYSENE	□ 0. 117	<0.006	□ 7.2	0.590	□ 7.2	0.120	0.504
DIBENZO(A,H)ANTHRACENE	□ 0.000117	<0.014	□ 0.0877[H]	<2.400	□ 33	<1.2	2.310
FLUORANTHENE	□ 1.46	<0.020	□ 156	2.200	□ 156	<3.800	11
FLUORENE	□ 1.46	<0.040	□ 247	<5.600	□ 247	<2.800	17.4
INDENO(1,2,3-CD)PYRENE	□ 0.00117	<0.016	□ 0.877[H]	<2.600	□ 17	<1.300	1.19
NAPHTHALENE	□ 1.46	0.017	□ 389	<3.000	□ 389	6.2	56.9
PYRENE	□ 1.1	<0.020	□ 99	3.600	□ 99	0.024	6.924
OTHER	□		□		□		
OTHER	□		□		□		

H - Value represents health-based concentration

	Soil	GW
Const. Worker: Benzene	12 ppm	3.42 ppm
Benz fluoranth	61.5 ppm	5.1×10^{-4} ppm

0.00005

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PLAN A EVALUATION

CATEGORY III: Soil and Groundwater Target Cleanup Level Determination

- Complete this worksheet for Category III sites. Indicate the maximum detected concentration for the chemicals of concern.
- If groundwater is >15 feet BGS, calculate groundwater protective soil concentrations using the equilibrium partition equation on Worksheet 11.5 (when site specific geotechnical parameters have been analyzed).
- Check the box for each compound that exceeds the target concentrations. If any boxes are checked, further corrective action (i.e., monitoring, Plan B, CAP) will be required.
- If other chemicals of concern are present but not listed, refer to *Risk-Based Corrective Action for Leaking Storage Tank Sites (RG-36)*

Chemical of Concern	GROUNDWATER (mg/ℓ)		SOIL (mg/kg)				
			Depth to Affected Soil ≤15 ft.		Depth to Affected Soil >15 ft.		
	TARGET CONC.	MAX. LAB. ANALYZED CONC.	TARGET CONC.	MAX. LAB. ANALYZED CONC.	TARGET CONC.	MAX. LAB. ANALYZED CONC.	GW >15 ft. CALC. SOIL CONC. C_T
BENZENE	☐ 0.14		☐ 3.5		☐ 3.5		
ETHYLBENZENE	☐ 5.21		☐ 1193		☐ 1193		
TOLUENE	☐ 10.4		☐ 716		☐ 716		
XYLENE	☐ 104		☐ 968		☐ 968		
ACENAPHTHENE	☐ 3.13		☐ 314		☐ 314		
ANTHRACENE	☐ 13		☐ 13		☐ 13		
BENZO(A)ANTHRACENE	☐ 0.00556		☐ 0.877[H]		☐ 153		
BENZO(B)FLUORANTHENE	☐ 0.00556		☐ 0.877[H]		☐ 154		
BENZO(K)FLUORANTHENE	☐ 0.0556		☐ 8.77[H]		☐ 47		
BENZO(A)PYRENE	☐ 0.000556		☐ 0.0877[H]		☐ 330		
CHRYSENE	☐ 0.556		☐ 7.2		☐ 7.2		
DIBENZO(A,H)ANTHRACENE	☐ 0.000556		☐ 0.0877[H]		☐ 33		
FLUORANTHENE	☐ 2.08		☐ 156		☐ 156		
FLUORENE	☐ 2.08		☐ 247		☐ 247		
INDENO(1,2,3-CD)PYRENE	☐ 0.00556		☐ 0.877[H]		☐ 17		
NAPHTHALENE	☐ 2.08		☐ 389		☐ 389		
PYRENE	☐ 1.56		☐ 99		☐ 99		
OTHER	☐		☐		☐		
OTHER	☐		☐		☐		

H - Value represents health-based concentration

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PLAN A EVALUATION

CATEGORY IV: Soil Target Cleanup Level Determination

- Complete this worksheet for Category IV sites. Check the appropriate column indicating the predominant land use and surface cover.
- Indicate the maximum detected soil concentration for the chemical of concern in the column checked. Check the box for each compound that exceeds the target concentration. If any boxes are checked, further corrective action will be required.
- Dermal exposure should be calculated if depth to groundwater is <15 feet, unless documentation can be provided that surface cover will be maintained and/or construction practices will not encroach upon groundwater[a]. For dermal exposure calculations refer to Chapter 10 of *Dermal Exposure Assessment, Principles and Applications (Interim Report)*, EPA/600/8-91/011B.NTIS PB92205665. Attach and provide all dermal exposure assessment calculations. Provide tables which include result and maximum detected concentrations.
- If other chemicals of concern are present but not listed, refer to *Risk-Based Corrective Action for Leaking Storage Tank Sites (RG-36)*.

Chemical of Concern	☐ RESIDENTIAL		☐ RESIDENTIAL		☐ COML./INDUSTRIAL	
	☐ Surface to 2 Feet Without Impervious Cover (Soil mg/kg)		☐ 2-15 Feet Without Impervious Cover ☐ Surface to 15 Feet with Impervious Cover (Soil mg/kg)		Surface to 15 feet Regardless of Surface Cover (Soil mg/kg)	
	Target Concentrations Based on Ingestion and Inhalation	Maximum Laboratory Analyzed Concentration	Soil Target Concentrations Based on Ingestion	Maximum Laboratory Analyzed Concentration	Target Concentrations Based on Ingestion/Inhalation	Maximum Laboratory Analyzed Concentration
BENZENE	☐ 6.3		☐ 22		☐ 10	
ETHYLBENZENE	☐ 3357		☐ 3357[b]		☐ 3357	
TOLUENE	☐ 3257		☐ 3257[b]		☐ 3257	
XYLENE	☐ 968		☐ 968[b]		☐ 968	
ACENAPHTHENE	☐ 314		☐ 314[b]		☐ 314	
ANTHRACENE	☐ 13		☐ 13[b]		☐ 13	
BENZO(A)ANTHRACENE	☐ 0.877		☐ 0.877		☐ 7.8	
BENZO(B)FLUORANTHENE	☐ 0.877		☐ 0.877		☐ 7.8	
BENZO(K)FLUORANTHENE	☐ 8.77		☐ 8.77		☐ 47	
BENZO(A)PYRENE	☐ 0.0877		☐ 0.0877		☐ 0.784	
CHRYSENE	☐ 7.2		☐ 87.7		☐ 7.2	
DIBENZO(A,H)ANTHRACENE	☐ 0.0877		☐ 0.0877		☐ 0.784	
FLUORANTHENE	☐ 156		☐ 156[b]		☐ 156	
FLUORENE	☐ 247		☐ 247[b]		☐ 247	
INDENO(1,2,3-CD)PYRENE	☐ 0.877		☐ 0.877		☐ 7.84	
NAPHTHALENE	☐ 782		☐ 782[b]		☐ 782	
PYRENE	☐ 99		☐ 99[b]		☐ 99	
OTHER	☐		☐		☐	
OTHER	☐		☐		☐	

a Written statements, institutional controls must be provided that impermeable surfaces will be maintained.
b Maximum concentration based on pure product saturation limits.

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PLAN A EVALUATION

SOILS ONLY AFFECTED (Regional Groundwater Beneficial Use Can Not Be Established

- Complete this worksheet when groundwater beneficial use can not be established. Check the appropriate land use and indicate the maximum detected soil concentration for the chemicals of concern in the appropriate columns.
- For those chemicals of concern exceeding the default target concentrations, use site specific parameters (if collected) to calculate target soil concentrations using the equilibrium partition equation (on the following page).
- Check the box for each chemical of concern that exceeds the default target concentration and the calculated C_T value (Target Soil Concentration Protective of Groundwater determined by the equilibrium partition equation).
- If any boxes are checked, further corrective action will be required.
- If other chemicals of concern are present but not listed, refer to *Risk-Based Corrective Action for Leaking Storage Tank Sites (RG-36).*

Chemical of Concern	SOIL (mg/kg)								
	Affected Soil ≤15 ft.						Affected Soil >15 ft.		
	☐ RESIDENTIAL			☐ COMMERCIAL / INDUSTRIAL					
	DEFAULT TARGET CONC.	MAX. LAB. ANALYZED CONC.	CALC. SOIL TARGET CONC. C_T	DEFAULT TARGET CONC.	MAX. LAB. ANALYZED CONC.	CALC.SOIL TARGET CONC. C_T	DEFAULT TARGET CONC.	MAX. LAB. ANALYZED CONC.	CALC. SOIL TARGET CONC. C_T
BENZENE	☐ 0.13		☐	☐ 0.13		☐	☐ 0.13		☐
ETHYLBENZENE	☐ 160		☐	☐ 160		☐	☐ 160		☐
TOLUENE	☐ 69		☐	☐ 69		☐	☐ 69		☐
XYLENE	☐ 568		☐	☐ 568		☐	☐ 568		☐
ACENAPHTHENE	☐ 314		☐	☐ 314		☐	☐ 314		☐
ANTHRACENE	☐ 13		☐	☐ 13		☐	☐ 13		☐
BENZO(A)ANTHRACENE	☐ 0.877[H]		☐ 0.877[H]	☐ 3.2		☐	☐ 3.2		☐
BENZO(B)FLUORANTHENE	☐ 0.877[H]		☐ 0.877[H]	☐ 7.8[H]		☐ 7.8[H]	☐ 13		☐
BENZO(K)FLUORANTHENE	☐ 8.77[H]		☐ 8.77[H]	☐ 47		☐	☐ 47		☐
BENZO(A)PYRENE	☐ 0.0877[H]		☐ 0.0877[H]	☐ 0.784[H]		☐ 0.784[H]	☐ 220		☐
CHRYSENE	☐ 7.2		☐	☐ 7.2		☐	☐ 7.2		☐
DIBENZO(A,H)ANTHRACENE	☐ 0.0877[H]		☐ 0.0877[H]	☐ 0.784[H]		☐ 0.784[H]	☐ 7.7		☐
FLUORANTHENE	☐ 156		☐	☐ 156		☐	☐ 156		☐
FLUORENE	☐ 247		☐	☐ 247		☐	☐ 247		☐
INDENO(1,2,3-CD)PYRENE	☐ 0.877[H]		☐ 0.877[H]	☐ 7.84[H]		☐ 7.84[H]	☐ 17		☐
NAPHTHALENE	☐ 389		☐	☐ 389		☐	☐ 389		☐
PYRENE	☐ 99		☐	☐ 99		☐	☐ 99		☐
OTHER	☐		☐	☐		☐	☐		☐
OTHER	☐		☐	☐		☐	☐		☐

H - Value represents health-based concentration. The equilibrium partition equation may only be used when affected soils are >15 feet BGS for these chemicals of concern.

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PLAN A EVALUATION

EQUILIBRIUM PARTITION EQUATION

- Use this section to determine the target soil concentrations protective of groundwater (C_T). The C_T value may be calculated for each chemical of concern under the following conditions:
  - the option is provided on the appropriate column of the site specific category worksheet;
  - default target concentration was exceeded;
  - site specific soil parameters have been collected.
- Provide all calculations for each chemical of concern.

PARAMETERS	REFERENCE VALUES USED TO CALCULATE DEFAULT TARGET CONCENTRATION	SITE SPECIFIC VALUES
C_w = Category I groundwater target concentration (chemical specific) (mg/ℓ)	*Reference worksheet 11.1 for chemical specific category I target concentration.*	
ρ_s = Dry Soil bulk density (g-soil/cm^3-soil)	1.8	1.54
θ_w = Water content (cm^3-H_2O/cm^3-soil)	0.1	Not Measured
θa = Air content (cm^3-air/cm^3-soil)	0.22	0.319
f_{oc} = Faction of organic carbon (g-C/g-soil)	0.002	0.0014
K_{oc} = Carbon-Water sorption coefficient (chemical specific) (g-H_2O/g-soil)	*Reference RG-36, page 55, Table B-1 for chemical specific values.*	See next page
K_d = Soil-Water sorption coefficient $= K_{oc} \times f_{oc}$	Chemical Specific	See next page
H' = Unitless form of Henry's law constant H x 41.57 (at 25°C)	*Reference RG-36 page 55*	See next page
C_l = Leachate Concentration Dilution Factor = 100	= Dilution Factor x C_W	See next page

Use this equation to determine the target soil concentration which is protective of groundwater for each chemical of concern. Use site specific geotechnical parameters to calculate C_T. (Use referenced default values for any parameters not analyzed.)

C_T = Target soil concentration protective of groundwater determined by the equilibrium partition equation

$$C_T = \frac{\left(C_l \times \left[\rho_s K_d + \theta_w + \theta_a H'\right]\right)}{\rho_s}$$

Calculations on following page.

Site Specific Target Soil Calculations

Contaminant	Category 1 Groundwater Target Concentration	Soil-Water Sorption Coefficient	Carbon-Water sorption Coefficient	Fraction of Organic Carbon	Dry Soil Bulk Density	Total Soil Porosity	Water Content	Air Content	Henry's Constant (Demisional)	Henry's Contant (Unitless)	Leachate Concentration	Target Soil Concentration
	C_w	K_d	K_{oc}	F_{oc}	B	θ	θ_w	θ_a	H	H'	C_l	C_t
Benzene	0.005	0.1162	83	0.0014	1.54	0.419	0.1	0.319	0.0056	0.2324	0.5	0.115
Ethyl benzene	0.7	1.54	1100	0.0014	1.54	0.419	0.1	0.319	0.0064	0.2673	70	116.221
Toluene	1	0.42	300	0.0014	1.54	0.419	0.1	0.319	0.0064	0.2648	100	53.979
Xylenes	10	0.336	240	0.0014	1.54	0.419	0.1	0.319	0.007	0.2927	198	91.388
Acenaphthene	2.19	6.44	4600	0.0014	1.54	0.419	0.1	0.319	9E-05	0.0038	3.42	22.250
Anthracene	11	19.6	14000	0.0014	1.54	0.419	0.1	0.319	0.001	0.0424	0.045	0.885
Benzo a anthracene	0.000117	1932	1380000	0.0014	1.54	0.419	0.1	0.319	1E-06	0.0000	0.0057	11.013
Benzo b fluoranthene	0.000117	770	550000	0.0014	1.54	0.419	0.1	0.319	1E-05	0.0005	0.014	10.781
Benzo k fluoranthene	0.00117	770	550000	0.0014	1.54	0.419	0.1	0.319	4E-05	0.0016	0.0043	3.311
Benzo a pyrene	0.0002	7700	5500000	0.0014	1.54	0.419	0.1	0.319	6E-07	0.0000	0.003	23.100
Chrysene	0.0117	280	200000	0.0014	1.54	0.419	0.1	0.319	1E-06	0.0000	0.0018	0.504
Dibenzo(A,H)anthracene	0.0000117	4620	3300000	0.0014	1.54	0.419	0.1	0.319	7E-08	0.0000	0.0005	2.310
Fluoranthene	1.46	53.2	38000	0.0014	1.54	0.419	0.1	0.319	6E-06	0.0003	0.206	10.973
Fluorene	1.46	10.22	7300	0.0014	1.54	0.419	0.1	0.319	6E-05	0.0027	1.69	17.382
Indeno(1,2,3-CD)pyrene	0.000117	2240	1600000	0.0014	1.54	0.419	0.1	0.319	7E-08	0.0000	0.00053	1.187
Naphthalene	1.46	1.82	1300	0.0014	1.54	0.419	0.1	0.319	0.0013	0.0538	30	56.882
Pyrene	1.1	53.2	38000	0.0014	1.54	0.419	0.1	0.319	5E-06	0.0002	0.13	6.924

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SITE PRIORITIZATION

PRIORITY 1 SITES

NAPL present? ☐ **yes** ■ **no** Evaluate all information on site soils, vapors, groundwater, surface water, and other impacts and check all boxes which match site conditions. The lowest value is the site priority. If priority cannot be determined, the assessment is inadequate.

	PRIORITY	ACTIONS
☐ 1.1	Explosive levels, or concentrations of vapors that could cause acute health effects are present in a residence or other building. (Ensure the local fire authority or State Fire Marshal (512/918-7100) and the local TNRCC Region Office have been notified.)	**Emergency Actions**: Notify appropriate authorities, property owners, and potentially affected parties. Mitigate vapor impact. **Additional Actions**: Conduct receptor survey. Conduct assessment of contaminant plumes. Determine target cleanup levels. Conduct remediation as necessary.
☐ 1.2	An active public water supply well, public water supply line, or public surface water intake is affected or immediately threatened by the release. (Ensure the public authority and the local TNRCC Region Office have been notified.)	**Emergency Actions:** Notify appropriate authorities, well users, and property owners. Prevent further migration. Mitigate impact. Discontinue use of water supply. **Additional Actions:** Provide alternative water source†. Conduct receptor survey. Conduct assessment of contaminant plumes in relation to water supply impact. Determine target cleanup levels. Conduct remediation as necessary.
☐ 1.3	A sole-source domestic water supply well or line, or sole-source domestic surface water intake is affected or immediately threatened by the release. (Ensure the well user or surface water user and the local TNRCC Region Office have been notified.)	**Emergency Actions:** Notify appropriate authorities, well users, and property owners. Prevent further migration. Mitigate impact. Discontinue use of water supply. **Additional Actions:** Provide alternative water source†. Conduct receptor survey. Conduct assessment of contaminant plumes in relation to water supply impact. Determine target cleanup levels. Conduct remediation as necessary.
☐ 1.4	Explosive vapors are present in a subsurface utility system, but no building or residence is affected. (Ensure the utility authority and the local TNRCC Region Office have been notified.)	**Emergency Actions:** Notify appropriate authorities, property owners, and affected parties. Mitigate vapor impact. **Additional Actions:** Conduct receptor survey. Conduct assessment of contaminant plumes. Determine target cleanup levels. Conduct remediation as necessary.
☐ 1.5	NAPL is present at the ground surface, on surface water bodies, surface water runoff, or in utilities other than water supply lines. (Ensure the utility authority is notified if utilities are affected. Ensure NAPL is removed as required pursuant to 30 TAC 334.79.)	**Emergency Actions:** Notify appropriate authorities, property owners, and affected parties. Secure area. **Additional Actions:** Conduct NAPL removal activities. Prevent migration of NAPL. Conduct assessment in relation to impact. Conduct receptor survey. Determine target cleanup levels. Conduct remediation as necessary.
☐ 1.6	The Edwards aquifer, recharge zone or transition zone is affected.	**Emergency Actions:** Recover NAPL if present. **Additional Actions:** Initiate assessment activities. Conduct assessment in relation to impact. Conduct receptor survey. Determine target cleanup levels. Conduct remediation as necessary. If NAPL is present, conduct removal activities.
☐ 1.7	Concentrations of vapors/particulates that could cause acute health affects, or safety concerns are present in outdoor air.	**Emergency Actions:** Notify appropriate authorities, property owners, and affected parties. Mitigate immediate impacts. **Additional Actions:** Conduct sufficient assessment to determine exposure pathways, receptors and their locations, and target cleanup goals. If NAPL is present, conduct removal activities.

† Reimbursement is contingent upon 30 TAC 334.308 (c)(3).

[1] PST ID: 108133

PRIORITY 2 SITES

	PRIORITY	ACTIONS
☐ 2.1	Soils or water contaminated by the release are exposed and unsecured from public access and dwellings, playgrounds, parks, day care centers, schools, or similar use facilities are located within 500 feet of those soils.	Remove, cover, or otherwise secure exposed soils or water. Fill open excavations. Conduct actions necessary to contain contamination or prevent impact or exposure.
☐ 2.2	A former vapor impact is associated with this site, or NAPL is present in close proximity to subsurface utilities or other natural or man-made conduit and there is potential for the accumulation of explosive vapors or vapors that could cause acute effects in a building or other structure.	Remediate/remove vapors, NAPL, or contaminated soils. Determine migration pathways and remove/prevent migration pathways. Conduct assessment of contaminant plumes in relation to the potential vapor pathway. Determine target cleanup levels. Conduct actions necessary to contain contamination or prevent impact or exposure.
☐ 2.3	A domestic water supply well or line, or a domestic surface water intake is affected or immediately threatened by the release, but the user has access to another public or private water supply. (Ensure the user and the local TNRCC Region Office have been notified.)	Notify proper authorities, users, and property owners. Prevent migration to water intake. Provide alternative water supply if necessary. Conduct assessment to identify contaminant plumes and exposure pathways in relation to water intake. Determine appropriate target cleanup goals based on site conditions. Conduct actions necessary to contain contamination or prevent impact or exposure.
☐ 2.4	A non-public or non-domestic water supply well is affected or immediately threatened. (Do not consider monitor wells.) (Ensure the user and the local TNRCC Region Office have been notified.)	Notify proper authorities, well users, and property owners. Prevent migration to water well. Provide alternative water supply if necessary. Plug water well if necessary. Conduct assessment to identify contaminant plumes and exposure pathways in relation to water well. Determine appropriate target cleanup goals based on site conditions. Conduct actions necessary to contain contamination or prevent impact or exposure.
☐ 2.5[1]	Groundwater is affected and a public or domestic water supply well is located within 0.25 miles of the UST/AST system or source area. (Check if a well is present, but the well use is unknown). **(See footnote 1 before responding.)**	Determine completion data and usage of well(s) if not already known. Conduct receptor survey to locate additional wells and other potential receptors (if not already done). Evaluate well impact potential. Determine appropriate cleanup goals based on site conditions. Conduct actions necessary to contain contamination or prevent impact or exposure.
☐ 2.6	Groundwater or storm water runoff is affected and discharges within 500 feet of the known extent of contamination to a surface water body used for human drinking water, contact recreation, habitat to a protected or listed endangered plant and animal species.	Conduct assessment which addresses the contaminant plumes in relation to the surface water. Determine target cleanup levels. Conduct actions necessary to contain contamination or prevent impact or exposure. Notify property owners if impact is documented.
☐ 2.7	A public or domestic water supply well that produces from a groundwater zone which is not affected or threatened is located within the known extent of contamination. (Check if a well is present, but the well use is unknown.)	Notify well users and property owners. Determine completion data and usage of water well(s). Conduct receptor survey to locate additional sensitive receptors. Investigate well impact or cross-contamination potential. Plug well(s) if necessary. Determine target cleanup levels. Conduct actions necessary to contain contamination or prevent impact or exposure. Monitor water well for groundwater quality.

LPST ID: 108133

PRIORITY 3 SITES

	PRIORITY	ACTIONS
☐ 3.1[1]	Groundwater is affected and a public or domestic water supply well is located between 0.25 and 0.5 miles from the UST/AST system or source area. (Check if a well is present in this interval, but the well use is unknown.) **(See footnote 1 before responding.)**	Determine completion data and usage of well(s) if not already known. Conduct receptor survey to locate additional wells and other potential receptors (if not already done). Evaluate well impact potential. Evaluate need for remediation.
☐ 3.2	Groundwater is affected and the affected groundwater zone may discharge between 500 feet and 0.25 miles of the UST/AST or source area to a surface water body used for human drinking water, contact recreation, or habitat to a protected or listed endangered plant and animal species.	Conduct assessment which evaluates potential to impact the surface water. Evaluate need for remediation.
☐ 3.3[1]	Groundwater is affected and a non-public or non-domestic water supply well is located within 0.25 miles of the UST/AST system or source area. **(See footnote 1 before responding.)**	Determine completion data and usage of well(s) if not already known. Conduct receptor survey to locate additional wells and other potential receptors (if not already done). Monitor water well for groundwater quality. Evaluate need for remediation.
☐ 3.4	A non-community or non-domestic water supply well that produces from a groundwater zone which is not affected or threatened is located within the known extent of contamination. (If a well is present, but the use of the well is unknown, check 2.7 instead.)	Notify well users and property owners. Determine completion data and usage of well(s) if not already known. Conduct receptor survey to locate additional wells and other potential receptors (if not already done). Investigate well impact or cross-contamination potential. Monitor water well for groundwater quality. Evaluate need for remediation.
☐ 3.5[2]	A designated major or minor groundwater aquifer is affected or immediately threatened. **(See footnote 2 before responding.)**	Conduct assessment of soil and groundwater contaminant plumes in relation to major or minor aquifer. Conduct receptor survey and water well inventory. Evaluate need for remediation.

PRIORITY 4 SITES

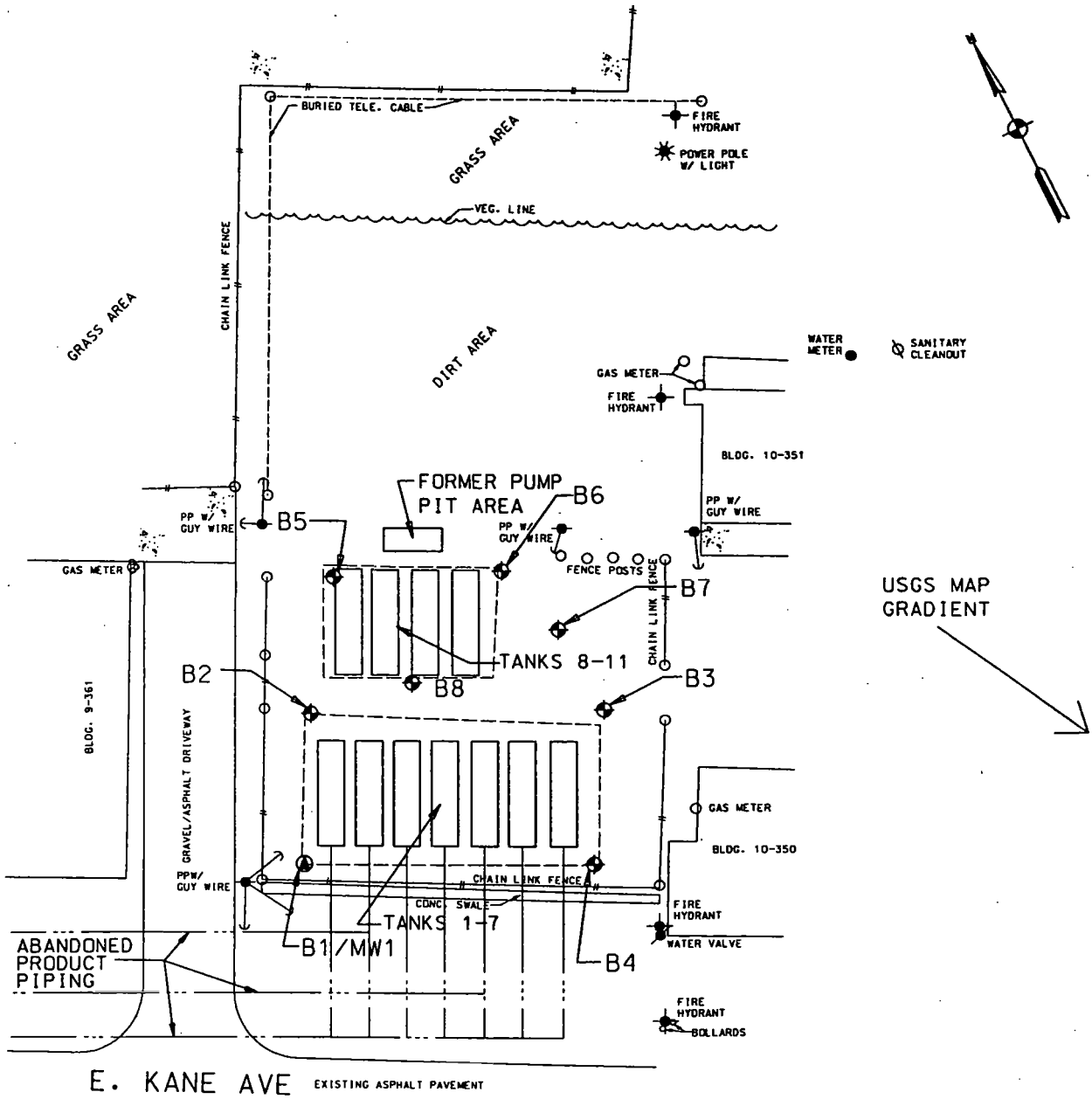
	PRIORITY	ACTIONS
■ 4.1	Groundwater is affected.	Conduct assessment of soil and groundwater contaminant plumes. Conduct receptor survey and water well inventory. Evaluate site conditions to determine need for additional corrective actions.
☐ 4.2	The vertical extent of contamination has been defined and the assessment results document that groundwater is not affected.	Conduct assessment of soil contaminant plume. Conduct receptor survey and water well inventory. Evaluate site conditions to determine need for additional corrective actions.

1. Consider only wells producing from the same interval as the affected groundwater zone at the release site, wells which may provide a cross-contamination pathway, or wells where completion details are unknown.

2. Refer to Major and Minor Aquifers of Texas Maps prepared by Texas Water Development Board, September 1990. Do not consider the low permeability Beaumont clays of the Beaumont Formation for the Gulf Coast aquifer. Do not consider a perched groundwater zone overlaying the principal producing portion of the aquifer unless the two are hydrologically connected.

Attachment 1
Site Plan

Abbreviations	Definition
%	percent
AST	Aboveground Storage Tank
AV	aviation
BGS	below ground surface
C	celius
CAP	corrective action plan
CAT	category
CH_4	methane
cm	cubic centimeter
cm^2/cm^2	square centimeter per square centimeter
CO_2	carbon dioxide
coml.	commercial
conc.	concentration
cont.	continue
EPA	Environmental Protection Agency
Fe	iron
ft.	feet
$ft.^2$	square feet
gal.	gallons
g/g	gram per gram
g/m^3	gram per cubic meter
gpd	gallons per day
ID	identification
in.	inches
Lab.	laboratory
LPST	Leaking Petroleum Storage Tank
LSA	Limited Site Assessment
Max.	maximum
MCL	maximum contaminant level
mg/kg	milligram per kilogram
mg/ℓ	milligram per liter
NAPL	non-aqueous phase liquids
No.	number
O_2	oxygen
ppm	parts per million
PST	Petroleum Storage Tank
RP	Responsible Party
RPR	Responsible Party Remediation
TAC	Texas Administrative Code
TEX	toluene, ethylbenzene, and total xylenes
TNRCC	Texas Natural Resource Conservation Commission
TPH	total petroleum hydrocarbons
UST	Underground Storage Tank



SCALE: 1" = 60'

NAME	LAT.	LONG.	ELEV.
BM1/MW1	29°53'23"N	097°51'38"W	573.06
BORE #2	29°53'23"N	097°51'38"W	571.39
BORE #3	29°53'23"N	097°51'36"W	571.02
BORE #4	29°53'22"N	097°51'37"W	571.48
BORE #5	29°53'23"N	097°51'37"W	571.55
BORE #6	29°53'23"N	097°51'37"W	571.72
BORE #7	29°53'23"N	097°51'36"W	571.14
BORE #8	29°53'23"N	097°51'37"W	571.55

STM	D.D. NO.	ACTION	DATE	DESCRIPTION OF REVISION

THOMPSON PROFESSIONAL GROUP, INC.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS

DESIGNED BY: JRM
DRAWN BY: MJC
CHECKED BY: JRM

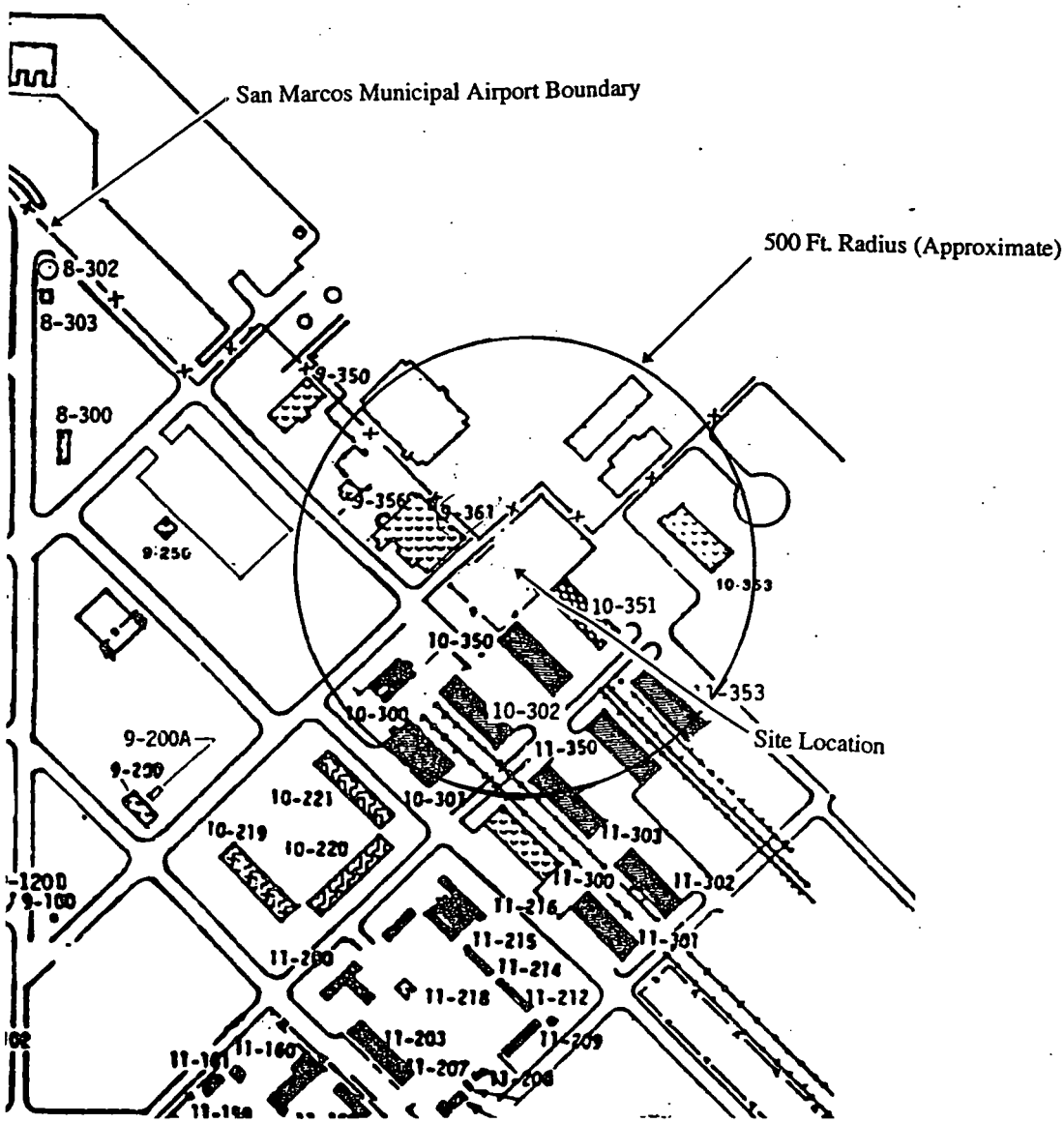
Former Gary AFB
San Marcos, Caldwell County, Texas
Attachment 1
Comprehensive Site Plan

SUBMITTED BY: (ENGINEER) DATE

SOL. NO. | DATE:
CONTR. NO.
DRAWING NUMBER | SHEET NO OF | SEQUENCE NO.

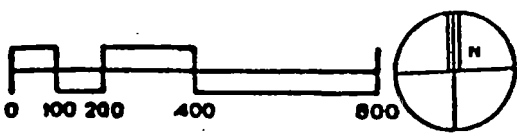
User: RIC.
Plotted On: 15 JAN 97 @ 10:34:29
FILENAME: d:\projects\867-09\01\dgn\garyatt1.dgn

Attachment 2
Vicinity Map



LEGEND:

- Housing
- Academic Education
- Vocational Education
- Food Service
- Recreation
- Medical-Dental
- Administration
- Storage-Support
- Unoccupied



SYM	D.D. NO	ACTION	DATE	DESCRIPTION OF REVISION

THOMPSON PROFESSIONAL GROUP, INC.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS

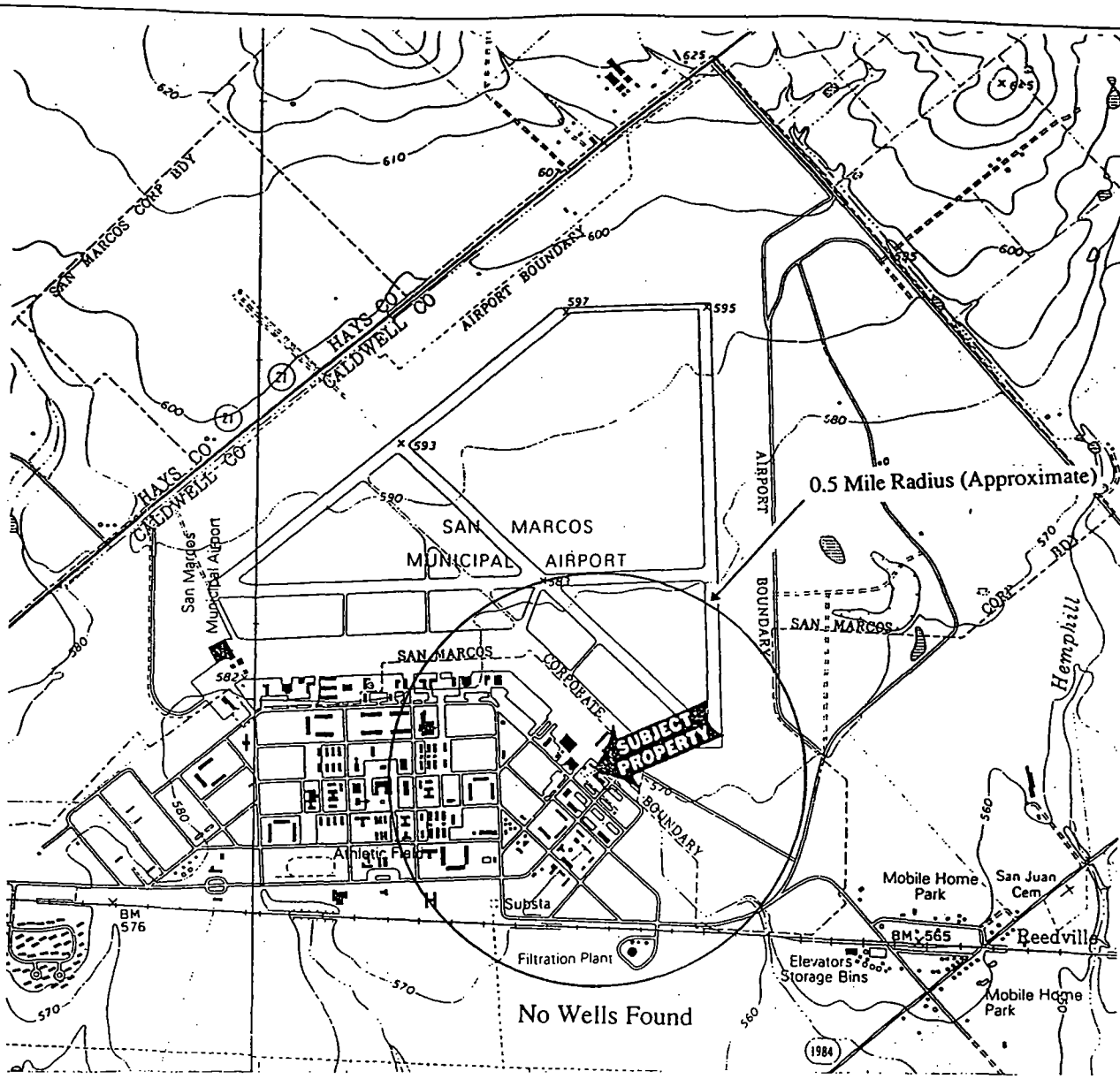
DESIGNED BY:
DRAWN BY:
CHECKED BY:

Former Gary AFB
San Marcos, Caldwell County, Texas
Attachment 2
Vicinity Map

SUBMITTED BY:
(ENGINEER) DATE

SOL. NO. | DATE:
CONTR. NO.
DRAWING NUMBER | SHEET NO OF
SEQUENCE NO.

Attachment 3
USGS Map with Water Well Locations



SCALE 1:24000

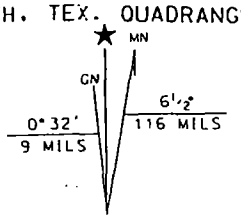
1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

SAN MARCOS NORTH, TEX. QUADRANGLE - 1994



UTM GRID AND 1994 MAGNETIC NORTH

SYM	D.O. NO	ACTION	DATE	DESCRIPTION OF REVISION

THOMPSON PROFESSIONAL GROUP, INC.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS

DESIGNED BY:
DRAWN BY:
CHECKED BY:

Former Gary AFB
San Marcos, Caldwell County, Texas
Attachment 3
USGS Map/Well Locations

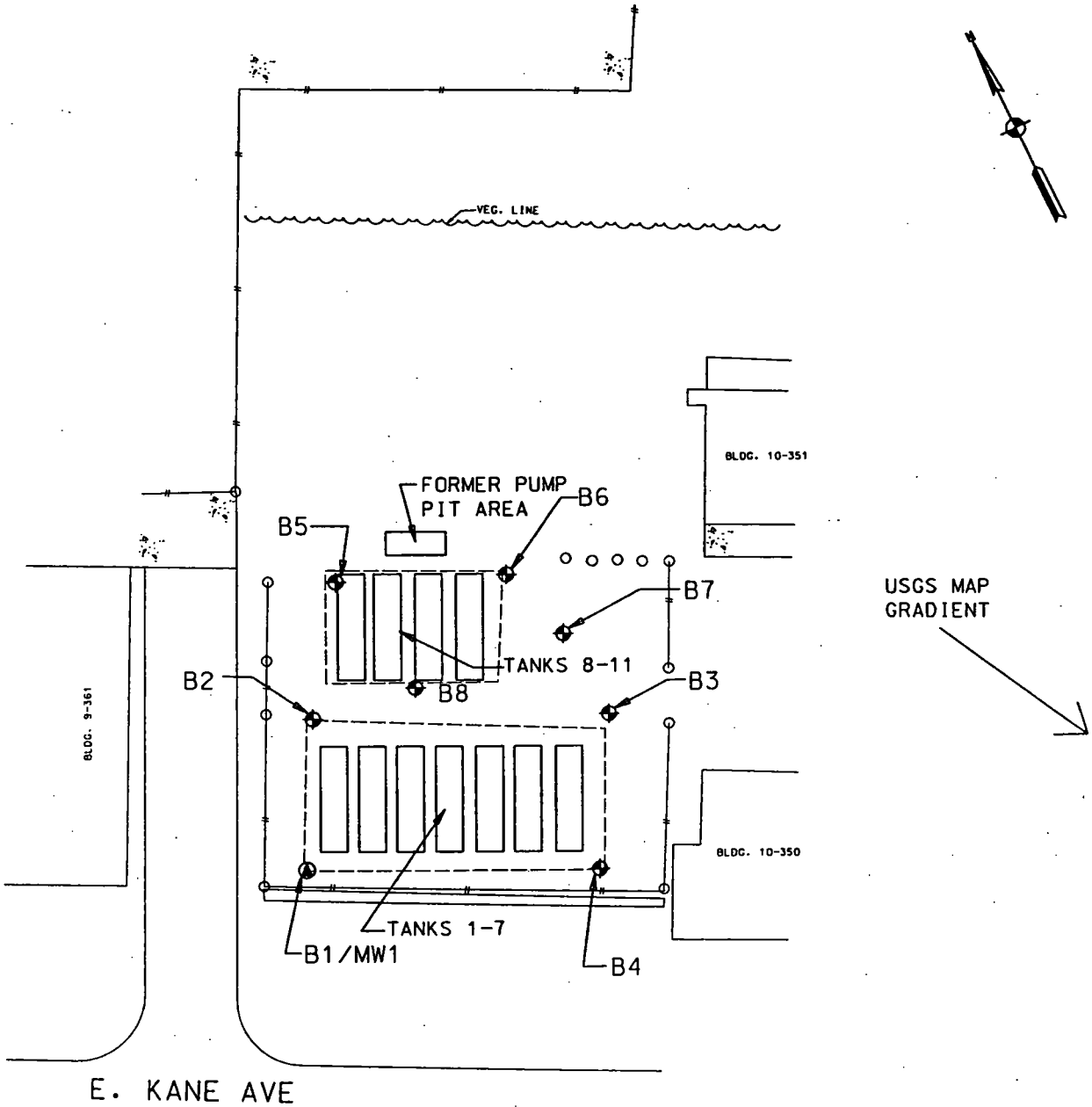
SUBMITTED BY:
(ENGINEER) DATE

SOL. NO.
DATE:
CONTR. NO.
DRAWING NUMBER
SHEET NO
OF
REFERENCE NO.

Attachment 4
Well Completion Details

No Wells Found

Attachment 5
Site Plan



SCALE: 1" = 60'

NAME	LAT.	LONG.	ELEV.
BM1/MW1	29°53'23"N	097°51'38"W	573.06
BORE #2	29°53'23"N	097°51'38"W	571.39
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BORE #4	29°53'22"N	097°51'37"W	571.48
BORE #5	29°53'23"N	097°51'37"W	571.55
BORE #6	29°53'23"N	097°51'37"W	571.72
BORE #7	29°53'23"N	097°51'36"W	571.14
BORE #8	29°53'23"N	097°51'37"W	571.55

SYM	B.D. NO	ACTION	DATE	DESCRIPTION OF REVISION

THOMPSON PROFESSIONAL GROUP, INC.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS

DESIGNED BY: JRM
DRAWN BY: MJC
CHECKED BY: JRM

Former Gary AFB
San Marcos, Caldwell County, Texas
Attachment 5
Site Plan

SUBMITTED BY:
(ENGINEER) DATE

SOL. NO. | DATE:
CONTR. NO. | SEQUENCE NO.
DRAWING NUMBER | SHEET NO OF

User: RIC
Plotted On: 10 JAN 97 @ 09:37:31
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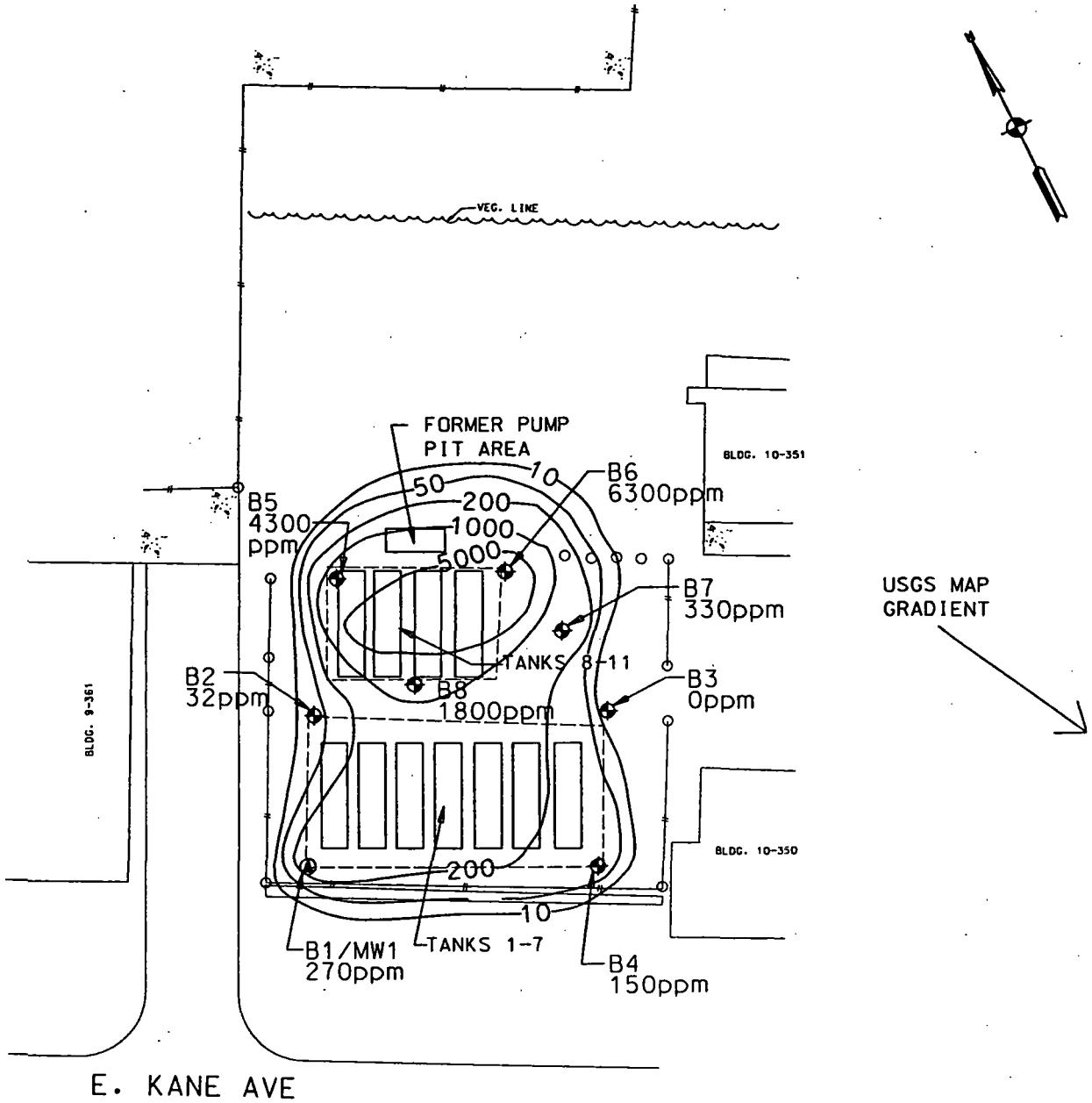
Attachment 6
Soil Contaminant Concentration Maps



SCALE: 1" = 60'

SYM	D.D. NO	ACTION	DATE	DESCRIPTION OF REVISION

THOMPSON PROFESSIONAL GROUP, INC.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS

DESIGNED BY: JRM
DRAWN BY: MJC
CHECKED BY: JRM

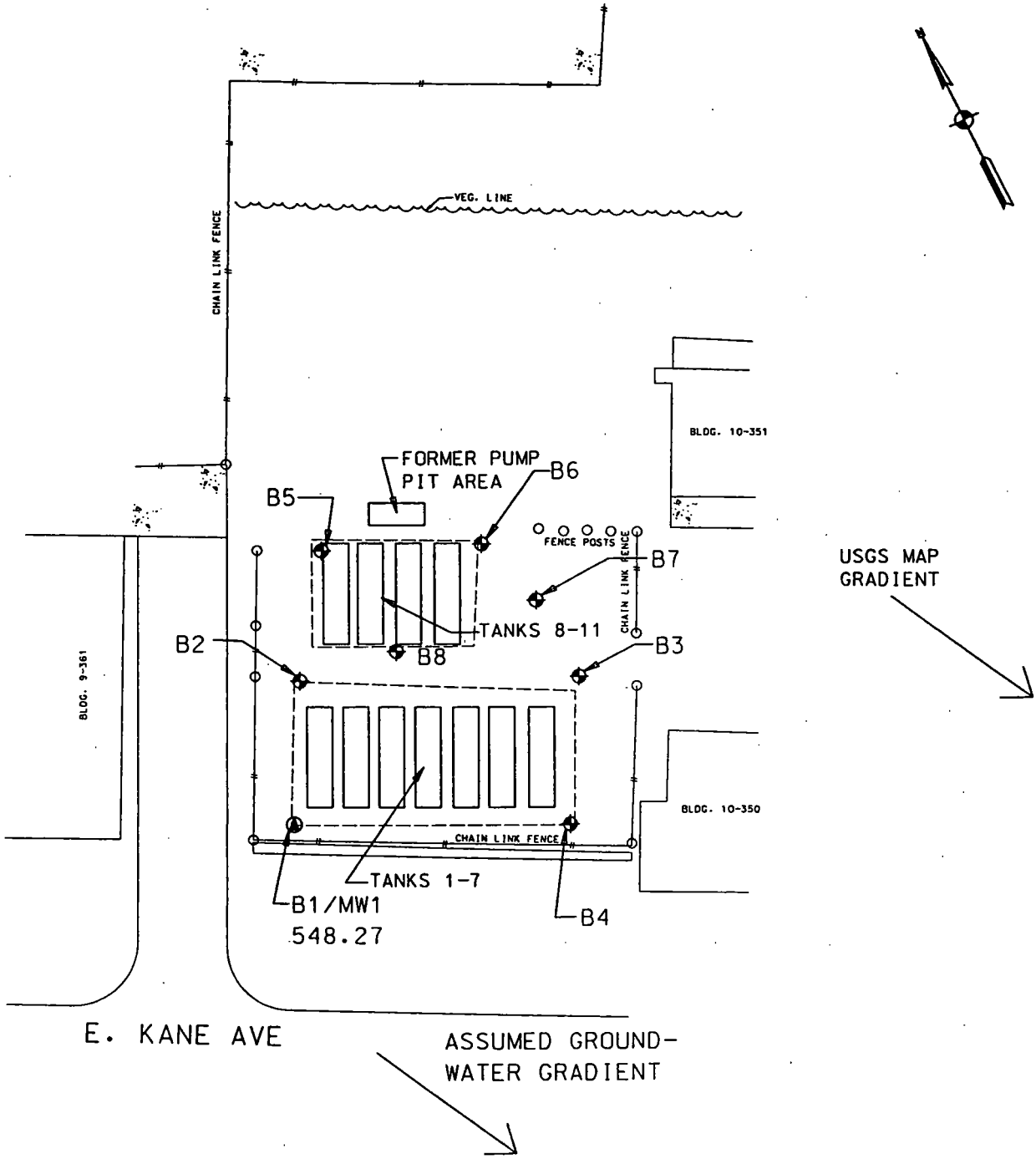
Former Gary AFB
San Marcos, Caldwell County, Texas
Attachment 6
TPH Contamination Concentration Map

SUBMITTED BY: (ENGINEER) DATE

SOL. NO. | DATE:
CONTR. NO. | SEQUENCE NO.
DRAWING NUMBER | SHEET NO OF

User: RICHARDN
Plotted On: 15 JAN 97 @ 09:37:05
FILENAME: d:\projects\867-09\01\dgn\garyatt6.dgn

Attachment 7
Groundwater Gradient Maps



SCALE: 1" = 60'

ELEVATION OF WATER LEVEL IN FEET ABOVE MEAN SEA LEVEL. INSUFFICIENT DATA FOR GROUNDWATER GRADIENT LEVELS.

SYM	D.D. NO	ACTION	DATE	DESCRIPTION OF REVISION

THOMPSON PROFESSIONAL GROUP, INC.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS

DESIGNED BY: JRM
DRAWN BY: WJC
CHECKED BY: JRM

Former Gary AFB
San Marcos, Caldwell County, Texas
Attachment 7
Groundwater Gradient Map

SUBMITTED BY: (ENGINEER) DATE

SOL. NO. | DATE:
CONTR. NO. | SEQUENCE NO.
DRAWING NUMBER | SHEET NO OF

User: RICHARDN
Plotted On: 15 JAN 97 @ 09:36:23
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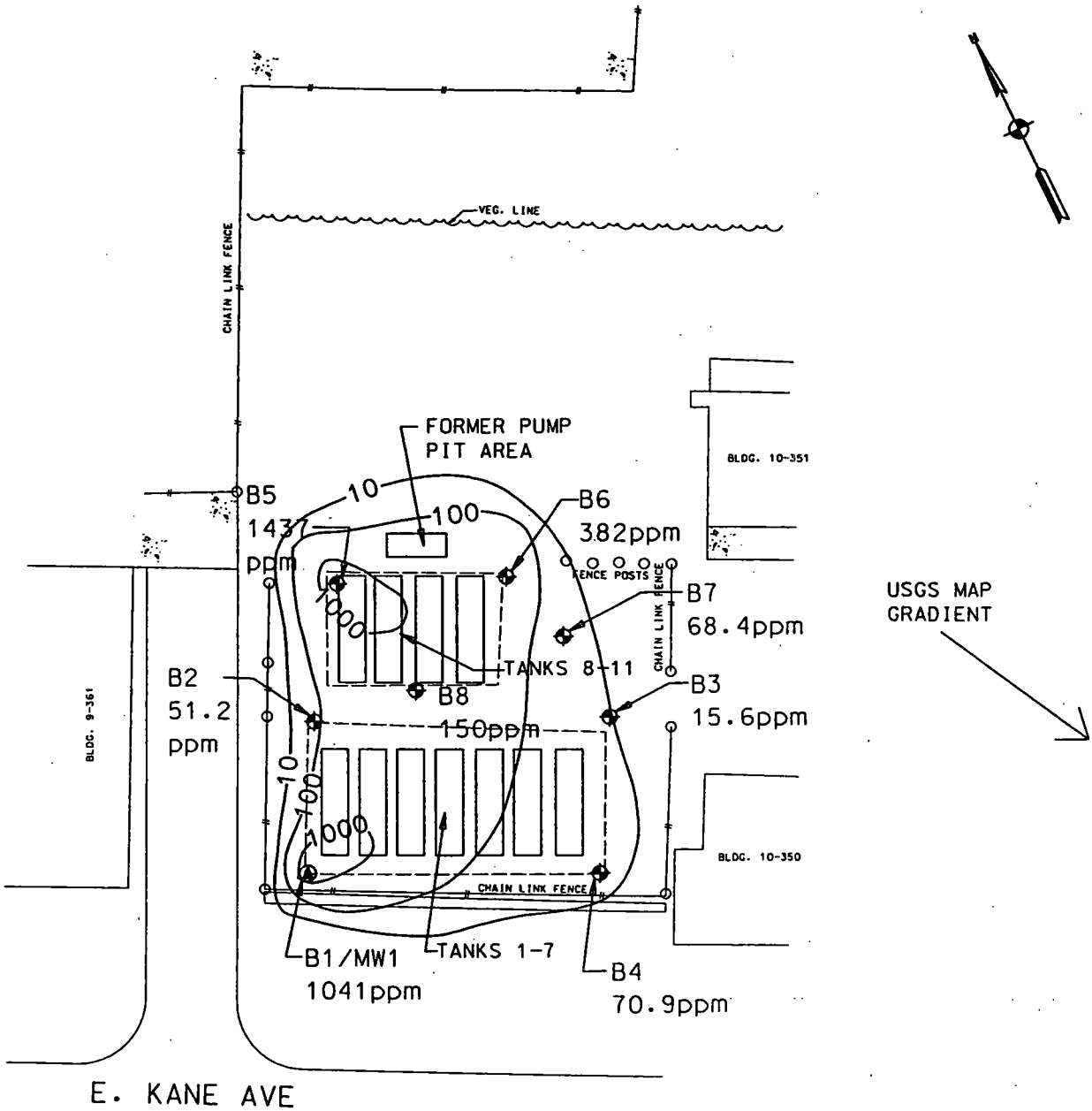
NOT APPLICABLE

NOT APPLICABLE

NOT APPLICABLE

Attachment 11
Soil Vapor Contaminant Concentration Map



SCALE: 1" = 60'

CALCULATED VAPOR CONTAMINATE CONCENTRATIONS IN PARTS PER MILLION, VAPORS

SYM	D.O. NO	ACTION	DATE	DESCRIPTION OF REVISION

THOMPSON PROFESSIONAL GROUP, INC.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS

DESIGNED BY: JRM
DRAWN BY: MJC
CHECKED BY: JRM

Former Gary AFB
San Marcos, Caldwell County, Texas
Attachment 11
Vapor Contaminant Concentration Map

SUBMITTED BY: (ENGINEER) DATE

SOL. NO. | DATE:
CONTR. NO. | SEQUENCE NO.
DRAWING NUMBER | SHEET NO OF

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Plotted On: 15 JAN 97 @ 09:34:38
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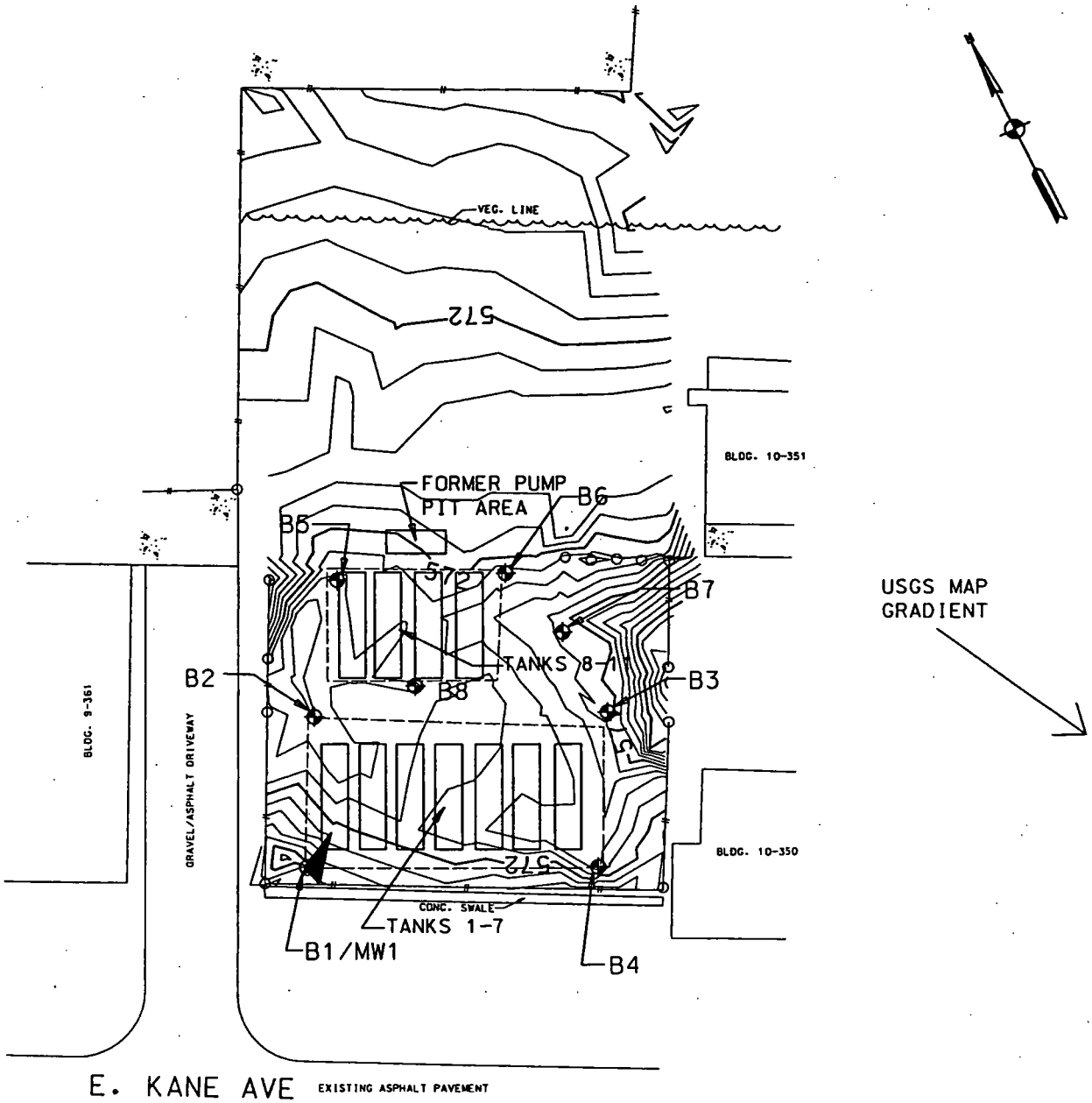
NOT APPLICABLE

Attachment 13
Surface Water Flow Maps



SCALE: 1" = 60'

CONTOURS REPRESENT A 0.1 FOOT CHANGE IN ELEVATION

SYM	D.O. NO	ACTION	DATE	DESCRIPTION OF REVISION

THOMPSON PROFESSIONAL GROUP, INC.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS

DESIGNED BY: JRM
DRAWN BY: MJC
CHECKED BY: JRM

Former Gary AFB
San Marcos, Caldwell County, Texas
Attachment 13
Surface Water Flow Map

SUBMITTED BY:
(ENGINEER) DATE

SOL. NO. | DATE:
CONTR. NO. | SEQUENCE NO.
DRAWING NUMBER | SHEET NO OF

User: RK
Plotted On: JAN 97 @ 09:33:32
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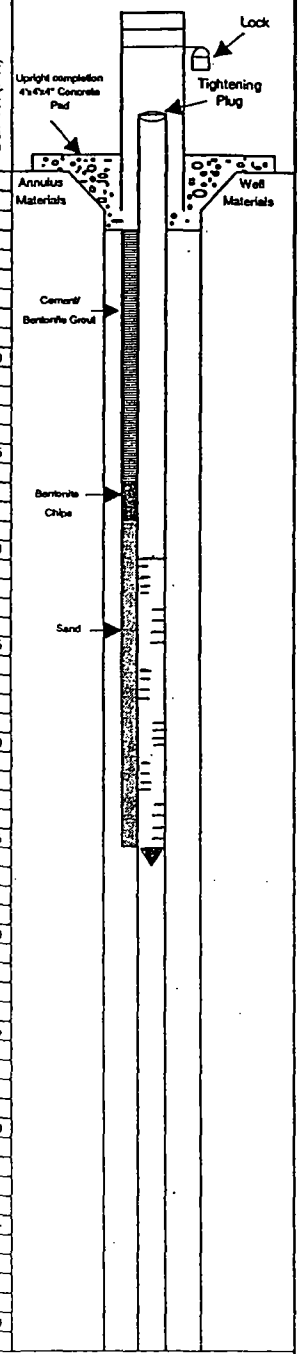
Attachment 14
Soil Boring Logs

LOG OF BORING/MONITORING WELL NO. 1

DEPTH	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	SCREENING DATA: ODOR	VISIBLE	DIRECT READING INTRUMENT (ppm by PID)	TYPE OF ANALYSIS	SUBMITTED for ANALYSIS	DEPTH (FT.)
			0-0.5' Black to brown clay, firm gravelly, consolidated						
			0.5-1.5' Tan to white $CaCO_3$ (caliche)						
			1.5-2.5' Unconsolidated, brown to gray gravelly clay						
			2.5-4' Reddish brown to black silty clay, gravel, black, high plasticity			5.7			
5			4-5' Black-brown black silty clay, high plasticity, small pebbles to larger pebbles at 5'						5
			5-6' Gravelly reddish brown silty clay, unconsolidated						
			6-10' Reddish brown silty clay, medium plasticity decreasing with depth, increasing porosity			4.8			
10			10-15' Reddish brown sandy clay, gravel increasing at 15', porosity good						10
				org.		5.9			
15			15-20' Brown gravelly clay, $CaCO_3$ nodules predominate	org		439			15
20			20-21' $CaCO_3$ (Caliche)						20
			21-21.5' Gray sandy clay						
			21.5-25' Brown to tan sand, porous, unconsolidated, moist	org		1041	Chem	■	
25			25-30' Sandy gravel, SiO_2, wet, saturated, ground water, capillary fringe at approximately 26.5', large gravel at 29' (2" diam.), tan	org		836	Chem	■	25
30			30-33' Tan to gray sandy clay, moist, increasing plasticity, decreasing porosity, black mottling, high plasticity, firm horizontal fracturing						30
			33-35' Tan clay, high plasticity, moist.						
35						195	Chem	■	35
40									40
45									45
50									50
55									55
60									60

Monitor Well Completion Data



Client: USACE Project No: 867-09.01 Date Drilled: 5/14/96 Driller: Terry Barrilt

Groundwater Elevation: Date: 5/15/96 Time: 2:10 pm Elevation: 545.36 Date: 5/16/96 Time: 9:50 Elevation: 545.33

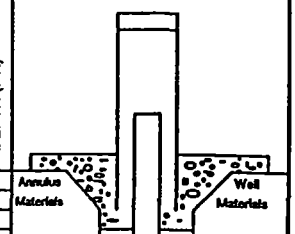
Ground Elevation: 573.06 Top of Casing Elevation: 575.96 Drilling Method: 3" Hollow Stem Auger

Total Depth: 35' Comments: Former Gary AFB, San Marcos, Start 10:15 am, Stop 11:17

LOG OF BORING NO. 2

DEPTH	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	SCREENING DATA: ODOR (*)	VISIBLE (*)	DIRECT READING INTRUMENT (ppm, by PID)	TYPE OF ANALYSIS	SUBMITTED for ANALYSIS	DEPTH (FT.)
			Tan to brown caliche fill 0-2' gravelly, unconsolidated						
			2-3' Dark brown silty clay, gravel to pebbles			2.7			
			3-4' Black clay, small $CaCO_3$ nodules, reddish brown, high plasticity						
			4-5' Black to brown clay with CaCO3 nodules increasing, decreasing			3.5			
5			plasticity, increasing porosity						5
			5-10' Reddish brown silty clay medium plasticity, CaCo3 nodules decreasing			3.6			
			with depth to 0, increasing plasticity with depth						
10			10'-12' Same as above						10
			12-15' Tan to gray silty clay with SiO2 pebbles and $CaCO_3$ nodules			3.7			
			increasing with depth to gravelly silty clay						
15			15-18' Reddish brown silty clay, SiO2 pebbles, moist, increasing consol-	org.		47			15
			idation with depth						
							Chem		
			18-20' Light gray to white clay, $CaCo_3$ nodules, high plasticity, firmly con-	org.		75			
			sofidated						
20			20-21' Gray gravelly clay, SiO2 gravel, decreasing size with depth	org.		53	Chem		20
			21-22.5' Tan clay, high plasticity	org.		103			
			22.5-24.5' Tan shaley clay, unconsolidated, with fractures, high				Geo-		
			plasticity, Fe				Tech		
25			24.5-25' Tan silty clay, consolidated, high plasticity, Fe nodules scattered			5.0			25
			25-30' Gray clay, shale fracturing broken throughout, high plasticity			4.4			
30							Chem		30
35									35
40									40
45									45
50									50
55									55
60									60

Monitor Well Completion Data



Client: USACE Project No: 867-09 01 Date Drilled: 5/15/96 Driller: Terry Barritt

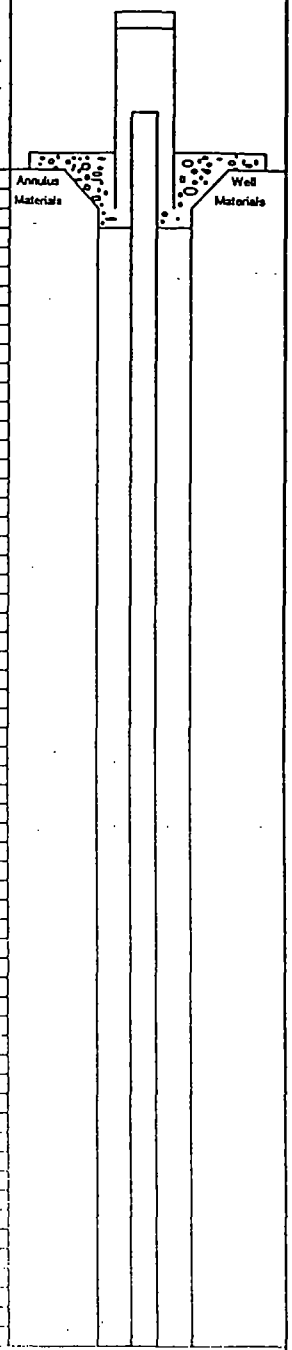
Groundwater Elevation: NA Date: NA Time: NA Elevation: NA Date: NA Time: NA Elevation: NA

Ground Elevation: 571.39 Top of Casing Elevation: NA Drilling Method: 3" Hollow Stem Auger

Total Depth: 30' Comments: No water-dryhole. Start 8:35 am Stop 9:50

LOG OF BORING NO. 3

DEPTH	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	SCREENING DATA: ODOR (*)	VISIBLE (*)	DIRECT READING (ppm, by PID)	INTRUMENT	TYPE OF ANALYSIS	SUBMITTED for ANALYSIS	Monitor Well Completion Data: DEPTH (FT.)
			0-2.5' Gravelly clay loam, tan to light gray, unconsolidated, "rocky" caliche			3.9				
			2.5-5' Black to reddish brown gravelly clay loam, more consolidation $CaCo_3$ nodules predominant			5				
5			5-5.5' same as above							5
			5.5-10' Reddish brown silty clay CaCo3 nodules with decreasing depth to zero, medium plasticity			4.5				
10			10-12' Same with increasing CaCo3 nodules							10
			12-14' Gray to white clay high plasticity, $CaCo_3$ nodules			5.6				
15										15
			15-20' Tan to white gravelly clay loam, unconsolidated	Slight		5.9		Chem		
20			20-21' Silty gravel, SiO_2, unconsolidated, gravel to pebble size, approximately 2 1/2" - 0.5"							20
			21-22' Transition zone gravel clay, gray, high plasticity			15.6		Chem		
25			22-25' Tan to reddish brown shaley clay, high plasticity, $CaCo_3$ nodules, Fe staining, nothing predominant							25
			25-30' Tan to gray shaley clay, decreasing plasticity, shale fracturing, Fe staining			4.2				
30								Chem		30
35										35
40										40
45										45
50										50
55										55
60										60



Client: USACE Project No: 867-09.01 Date Drilled: 5/15/96 Driller: Terry Barntt

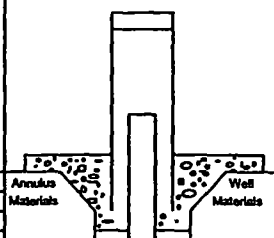
Groundwater Elevation: Date: NA Time: NA Elevation: NA Date: NA Time: NA Elevation: NA

Ground Elevation: 571.02 Top of Casing Elevation: NA Drilling Method: 3" Hollow Stem Auger

Total Depth: 30' Comments: No water-dryhole. Start 10:15am. Stop 11:30pm.

LOG OF BORING NO. 4

DEPTH	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	SCREENING DATA: ODOR (*)	VISIBLE (*)	DIRECT READING INTRUMENT (ppm, by PID)	TYPE OF ANALYSIS	SUBMITTED for ANALYSIS	Monitor Well Completion Data: DEPTH (FT.)
			0'-2.5' Light brown silty clay, medium plasticity, organic material, SiO_2 pebbles			39			
			2.5-3' Brown gravelly clay						
			3-5' Light brown silty clay, SiO_2 pebbles						
5			5-10' Same, $CaCO_3$ nodules			24.7			6
10			10-11' Same, increasing $CaCO_3$ nodules			27			10
			11-13.5' Light brown silty clay, decreasing $CaCO_3$ to 0.			99			
			13.5-15' Light tan clay loam unconsolidated, low to medium plasticity						
15			15-15.5' Same			42			15
			15.5-17.5' Light gray to white loam gravel, SiO_2 pebbles - gravel size				Chem	[redacted]	
			17.5-18.5' Same						
			18.5-19' Tan silty sand	org.		99	Chem	[redacted]	
			19.5-20' Tan sandy clay, SiO_2 pebbles						
20			20-22' Tan clay with gravel to pebble size rocks, increasing sand content at			30			20
			22-22.5' gray, clay, clay high plasticity, firm						
			22.5-25' Tan to gray clay shale, gray shale fractured						
25			25-30' Same, Fe staining increasing with depth			25.5			25
30							Chem	[redacted]	30
35									35
40									40
45									45
50									50
55									55
60									60



Client: USACE Project No: 867-09.01 Date Drilled: 5/15/96 Driller: Terry Barritt

Groundwater Elevation: Date:NA Time: NA Elevation: NA Date: NA Time: NA Elevation: NA

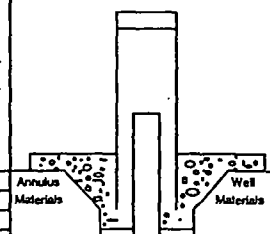
Ground Elevation: 571.48 Top of Casing Elevation: NA Drilling Method: 3" Hollow Stem Auger

Total Depth: 30' Comments: No water-dryhole Start 2:00 pm. Stop 3:30 pm.

LOG OF BORING NO. 5

DEPTH	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	SCREENING DATA: ODOR (*)	VISIBLE (*)	DIRECT READING INTRUMENT	TYPE OF ANALYSIS	SUBMITTED for ANALYSIS	DEPTH (FT.)
			0'-0.5' Sandy loam, organic material						
			0.5-0.75' Silty clay with $CaCO_3$ nodules						
			0.75-5' Brown silty clay, medium plasticity, organic material			33.8			
5			5-5.5' Gravelly brown silty clay transition zone						5
			5.5-10' Dark brown gravelly clay, high plasticity, gravel (2"), pebble size rocks						
10			10-13' Same (Note: black plastic (thin poly) encountered at 10')	org.		57			10
			13-14' Black clay with gravel to pebble size rocks, high plasticity	org.		300			
			(Note: White thicker mil poly at 13')	org.		686	Chem		
15			14-15' Tan clay, $CaCo_3$ nodules, odor	str. org.		295			15
			15-16.5' Same, decreasing $CaCo_3$, moist sloughing						
			16.5-20' Light gray silty clay	org.		1437	Chem		
20			20-20.5' Light gray clay sand			348	Chem		20
			20.5-21' Transition zone gravelly sand						
			21-25' Gray to reddish brown shaley clay, high plasticity, stiff fracturing - horizontal and vertical			124			
25			25-30' Same			49.1			25
30							Chem		30
35									35
40									40
45									45
50									50
55									55
60									60

Monitor Well Completion Data



Client: USACE Project No: 867-09.01 Date Drilled: 5/16/96 Driller: Terry Barrett

Groundwater Elevation: Date: NA Time: NA Elevation: NA Date: NA Elevation: NA

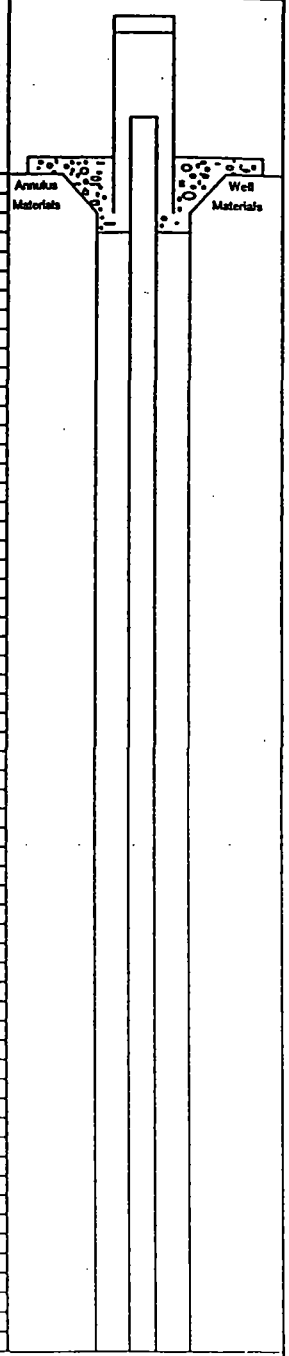
Ground Elevation: 571.55 Top of Casing Elevation: NA Drilling Method. : 3" Hollow Stem Auger

Total Depth: 30' Comments: No water-dryhole. Start 8:45am. Stop 9:30am.

LOG OF BORING NO. 6

DEPTH	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	SCREENING DATA: ODOR (')	VISIBLE (')	DIRECT READING INTRUMENT (ppm, by PID)	TYPE OF ANALYSIS	SUBMITTED for ANALYSIS	DEPTH (FT.)
			0-1' Gravelly sandy loam			55.7			
			1-2.25' Black clay, hard, high plasticity, gravel to pepple size rocks						
			Transition zone at 2.25-2.5', Red brown clay with black clay						
			2.5-3.5' Same organic material						
5			3.5-5' Red brown silty clay with $CaCO_3$ nodules			77			5
			5-6.5' Same with increasing black clay content						
			6.5-7.5' Red brown gravely clay, $CaCO_3$ nodules predominant						
			7.5-10' Red brown silty clay decreasing plasticity increasing silt content			87.7			
10			10-11' Red brown silty clay, decreasing CaCO3 medium plasticity						10
			11-12' Tan clay silt, Low through medium plasticity, unconsolidated						
			12-15' Tan silty gravel, unconsolidated			62			
15			15-17.5' Gravelly sand, tan, SiO_2 gravel to pebble size rocks (2")						15
				faint		108			
			17.5-18' Tan sandy clay, moist	org.		178	Chem	■	
			18-20' Gray-green-white sandy clay pebbles, high plasticity clay, stiff						
20			20-22' Gravelly sand, moist low plasticity						20
				org		382	Chem	■	
			22-23' Tan-gray clay, no gravel, high plasticity						
			23-25' Tan-gray shaley clay, highly fractured, high plasticity			47.3			
25			25-30' Same, Fe staining predominant in 28-28.5' decreasing with depth			42.8	Geo-tech	■	25
30							Chem	■	30
35									35
40									40
45									45
50									50
55									55
60									60

Monitor Well Completion Data



Client: USACE Project No: 867-09.01 Date Drilled: 5/16/96 Driller : Terry Barritt

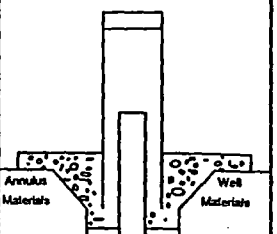
Groundwater Elevation: Date: NA Time: NA Elevation: NA Date: NA Time: NA Elevation: NA

Ground Elevation: 571.72 Top of Casing Elevation: NA Drilling Method: 3" Hollow Stem Auger

Total Depth: 30' Comments: No Water - Dry Hole, Start 10:15 am, Stop 10:55 am

LOG OF BORING NO. 7

DEPTH	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	SCREENING DATA: ODOR (*)	VISIBLE (*)	DIRECT READING INTRUMENT (ppm, by PID)	TYPE OF ANALYSIS	SUBMITTED for ANALYSIS	Monitor Well Completion Data: DEPTH (FT.)
			0-3' Tan-black gravelly clay, broken up			6.2			
			3-4.5' Black clay with reddish brown motling, high plasticity, $CaCO_3$						
			4.5-5' Red brown to white clay gravel, $CaCO_3$ nodules dominant						
5			5-8' Red brown silty clay with CaCO3 nodules prominent decreasing with depth, high through medium plasticity			7.0			5
			8-10' Tan silty clay, medium plasticity						
10			10-10.25' Red clay, high plasticity						10
			10.25-13' Tan silty clay, medium plasticity			7.3			
			13-15' White to tan clay gravel, SiO_2 gravel to pebble size rocks						
15			15-16' Same						15
			16-17' Gray-white silty clay, medium plasticity						
			17-17.5' Same	org		31	Chem		
			17.5-18.5' Gravelly clay, 1/2"pebble						
			18.5-20' Gray silty clay, Fe mottling, SiO_2 pebbles						
20			20-21' Light gray gravelly clay	org		68.4			20
			21-21.5' Transition zone, light gray to brown gravelly clay, moist						
			21.5-22' Light brown clay gravel, moist	org		249	Chem		
			22-23' Transition gravelly clay, gray to light brown						
			23-25' Light brown, tan/gray shale streamers, clay high plasticity						
25			25-30' Light gray with red brown mottling clay shale, high plasticity			23.6			25
30							Chem		30
35									35
40									40
45									45
50									50
55									55
60									60



Client: USACE Project No: 867-09.01 Date Drilled: 5/16/96 Driller: Terry Barrett

Groundwater Elevation: Date: NA Time: NA Elevation: NA Date: NA Time: NA Elevation: NA

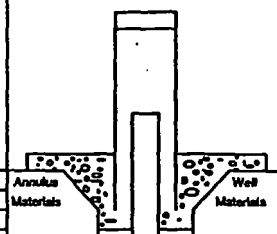
Ground Elevation: 571.14 Top of Casing Elevation: NA Drilling Method: 3" Hollow Stem Auger

Total Depth: 30' Comments: No Water, Dry Hole, Start 1:50 pm, Stop 2:47 pm.

LOG OF BORING NO. 8

DEPTH	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	SCREENING DATA: ODOR (*)	VISIBLE (*)	DIRECT READING INTRUMENT (ppm, by PID)	TYPE OF ANALYSIS	SUBMITTED for ANALYSIS	DEPTH (FT.)
			0-0.5' Sandy loam, tan, organic material, SiO_2 pebbles						
			0.5-1' Gray gravelly clay, high plasticity, stiff						
			1-2' Tan-gray clay gravel, pebble size rocks 1.5"			6.2	Chem	■	
			2-2.5' Gravelly limestone. Note: Wood chip at 2.5'						
5			2.5-3' Wood						5
			3-3.5' Gravel 1 1/2" -pebble size, loose, no cohension						
			3.5-4.25' Black clay, high plasticity, stiff						
			4.25'-5 Black gravelly clay, stiff						
			5-6' Tan-light brown silty clay, abundant $CaCO_3$ nodules decreasing with depth						
10			6-10' Redish brown silty clay with occasional $CaCO_3$ nodules,			7.0			10
			medium plasticity						
			10-13' Light brown silty clay, medium plasticity, decreasing with depth			7.3			
			13-14' Light brown sandy clay, low through medium plasticity, moist						
			14-15' Light gray, light brown sand with $CaCO_3$ nodules predominant						
15			15-19.75' Light brown sandy gravel, SiO_2 gravel 1"-pebble size rocks	org		7			15
							Chem	■	
			19.75-20' Light gray-white $CaCO_3$ modules with clay (light brown)	org		94			
			high plasticity						
20			20-21.5' Light brown-gray sandy gravel SiO_2 2"-pebble size rocks						20
			21.5-23' Light gray-reddish brown gravelly clay, high plasticity, clay gravel						
			2 1/2"-pebble size rocks	org		200	Chem	■	
			23-25' Light gray-reddish brown Fe mottling clay, high plasticity, stiff,			68.4			
			shale content with depth, some fracturing						
25			25-30' Light gray to reddish brown Fe staining, shale clay, highly			23.6			25
			fractured, high plasticity						
30							Chem	■	30
35									35
40									40
45									45
50									50
55									55
60									60

Monitor Well Completion Data



Client: USACE Project No: 867-09.01 Date Drilled: 5/16/96 Driller: Terry Barritt

Groundwater Elevation. Date: NA Time: NA Elevation: NA Date: NA Time: NA Elevation. NA

Ground Elevation: 571.55 Top of Casing Elevation: NA Drilling Method: 3"Hollow Stem Auger

Total Depth: 30' Comments: No water-dryhole. Start 4 pm. Stop 4:55 pm

Send original copy by certified mail to: TNRCC, P.O. Box 13087, Austin, TX 78711-3087

Please use black ink.

ATTENTION OWNER: *Confidentiality Privilege Notice on Reverse Side*

State of Texas WELL REPORT

Texas Water Well Drillers Advisory Council
P.O. Box 13087
Austin, TX 78711-3087
512-239-0530

1) OWNER USACE (Name) ADDRESS 819 Taylor st (Street or RFD) Ft Worth (City) Tx (State) 76102 (Zip)

2) ADDRESS OF WELL: County Hays (Street, RFD or other) San Marcos (City) Tx (State) (Zip) GRID #

3) TYPE OF WORK (Check): [X] New Well [ ] Deepening [ ] Reconditioning [ ] Plugging

4) PROPOSED USE (Check): [X] Monitor [ ] Environmental Soil Boring [ ] Domestic [ ] Industrial [ ] Irrigation [ ] Injection [ ] Public Supply [ ] De-watering [ ] Testwell
If Public Supply well, were plans submitted to the TNRCC? [ ] Yes [ ] No

5)

6) WELL LOG: B-1
Date Drilling:
Started 5/14 1996
Completed 5/14 1996

DIAMETER OF HOLE		
Dia. (in.)	From (ft.)	To (ft.)
7.5	Surface	35

7) DRILLING METHOD (Check): [ ] Driven [ ] Air Rotary [ ] Mud Rotary [ ] Bored [ ] Air Hammer [ ] Cable Tool [ ] Jetted [X] Other HSA

N

From (ft.)	To (ft.)	Description and color of formation material
0	2.5	Dark Brown Silty Clay
2.5	6.0	Black to brown Clay
6.0	18	Redish Tan to brown Silty Clay
18	20	Tanish Leany Silty Clay
20	23	Tan Silty Leanelly Clay
23	28	Tan to Redish brown Sholey Clay
28	35	Leany Shale Clay

TD = 35

(Use reverse side if necessary)

8) Borehole Completion (Check): [ ] Open Hole [ ] Straight Wall [ ] Underreamed [X] Gravel Packed [ ] Other
If Gravel Packed give interval ... from 15 ft. to 34' ft.

CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casting Screen
2	N	PVC Sch 40 Screen	17.5	33.5	.010
2	N	PVC Sch 40 Blank (Tri-Lock PVC)	0	17.5	

9) CEMENTING DATA [Rule 338.44(1)]
Cemented from 0 ft. to 12 ft. No. of sacks used 2
ft. to ft. No. of sacks used
Method used Tremie
Cemented by Maxim Tech
Distance to septic system field lines or other concentrated contamination ____ ft.
Method of verification of above distance

10) SURFACE COMPLETION
[X] Specified Surface Slab Installed [Rule 338.44(2)(A)]
[ ] Specified Steel Sleeve Installed [Rule 338.44(3)(A)]
[ ] Pitless Adapter Used [Rule 338.44(3)(b)]
[ ] Approved Alternative Procedure Used [Rule 338.71]

11) WATER LEVEL:
Static level 20' ft. below land surface Date 5/15/96
Artesian flow gpm. Date

12) PACKERS: N/A Type Depth

13) TYPE PUMP: N/A
[ ] Turbine [ ] Jet [ ] Submersible [ ] Cylinder
[ ] Other
Depth to pump bowls, cylinder, jet, etc., ____ ft.

14) WELL TESTS: N/A
Type test: [ ] Pump [ ] Bailer [ ] Jetted [ ] Estimated
Yield: ____ gpm with ____ ft. drawdown after ____ hrs.

15) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable constituents?
[ ] Yes [X] No If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? Depth of strata
Was a chemical analysis made? [ ] Yes [ ] No

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief. I understand that failure to complete items 1 thru 15 will result in the log(s) being returned for completion and resubmittal.

COMPANY NAME Maxim Technologies (Type or print) WELL DRILLER'S LICENSE NO. 3058-M

ADDRESS 2575 Lone Star Dr (Street or RFD) Dallas (City) Tx (State) 75212 (Zip)

(Signed) (Licensed Well Driller) (Signed) (Registered Driller Trainee)

SM

Please attach electric log, chemical analysis, and other pertinent information, if available.

TNRCC-0199 (Rev. 11-01-94)

TNRCC COPY

Send original copy by certified mail to: TNRCC, P.O. Box 13087, Austin, TX 78711-3087

Please use black ink.

ATTENTION OWNER: *Confidentiality Privilege Notice on Reverse Side*

State of Texas WELL REPORT

Texas Water Well Drillers Advisory Council
P.O. Box 13087
Austin, TX 78711-3087
512-239-0530

1) OWNER USACE (Name) ADDRESS 819 Taylor st. (Street or RFD) Fort Worth (City) Tx (State) 76102 (Zip)

2) ADDRESS OF WELL: County Hays (Street, RFD or other) San Marcos (City) Tx (State) (Zip) GRID #

3) TYPE OF WORK (Check): ☐ New Well ☐ Deepening ☐ Reconditioning ☒ Plugging

4) PROPOSED USE (Check): ☐ Monitor ☒ Environmental Soil Boring ☐ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5)

6) WELL LOG: B-2
Date Drilling: Started 4/16 1996 Completed 4/16 1996

DIAMETER OF HOLE		
Dia. (in.)	From (ft.)	To (ft.)
7.5	Surface	30

7) DRILLING METHOD (Check): ☐ Driven ☐ Air Rotary ☐ Mud Rotary ☐ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☒ Other HSA

N

From (ft.)	To (ft.)	Description and color of formation material
0	5	Brownish black Silty Clay
5	12	Redish brown Silty Clay
12	15	Tan to Gray Silty Clay
15	18	Redish brown Silty Clay
18	20	Light Gray Clay
20	22.5	Gray + Tan Clay
22.5	25	Tan Shaley Clay
25	30	Gray Shaley Clay

TD = 30.0

(Use reverse side if necessary)

8) Borehole Completion (Check): ☐ Open Hole ☐ Straight Wall ☐ Underreamed ☐ Gravel Packed ☐ Other N/A
If Gravel Packed give interval ... from _____ ft. to _____ ft.

CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casting Screen
		N/A			

9) CEMENTING DATA [Rule 338.44(1)]
Cemented from 0 ft. to 30 ft. No. of sacks used 5
_____ ft. to _____ ft. No. of sacks used _____
Method used Mud Pump
Cemented by Maxim
Distance to septic system field lines or other concentrated contamination _____ ft.
Method of verification of above distance _____

10) SURFACE COMPLETION
☐ Specified Surface Slab Installed [Rule 338.44(2)(A)]
☐ Specified Steel Sleeve Installed [Rule 338.44(3)(A)]
☐ Pitless Adapter Used [Rule 338.44(3)(b)]
☐ Approved Alternative Procedure Used [Rule 338.71]

11) WATER LEVEL:
Static level Dry ft. below land surface Date 4/16/96
Artesian flow _____ gpm. Date _____

12) PACKERS: N/A Type Depth

13) TYPE PUMP: N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other _____
Depth to pump bowls, cylinder, jet, etc., _____ ft.

14) WELL TESTS: N/A
Type test: ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield: _____ gpm with _____ ft. drawdown after _____ hrs.

15) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable constituents?
☐ Yes ☒ No If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? _____ Depth of strata _____
Was a chemical analysis made? ☐ Yes ☐ No

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief. I understand that failure to complete items 1 thru 15 will result in the log(s) being returned for completion and resubmittal.

COMPANY NAME Maxim Technologies (Type or print) WELL DRILLER'S LICENSE NO. 3058-M

ADDRESS 2575 Lone Star Dr (Street or RFD) Dallas (City) Tx (State) 75212 (Zip)

(Signed) _____ (Licensed Well Driller) (Signed) _____ (Registered Driller Trainee)

Please attach electric log, chemical analysis, and other pertinent information, if available.

TNRCC-0199 (Rev. 11-01-94)

DRILLER'S COPY

Send original copy by certified mail to: TNRCC, P.O. Box 13087, Austin, TX 78711-3087

Please use black ink.

ATTENTION OWNER: *Confidentiality Privilege Notice on Reverse Side*

State of Texas WELL REPORT

Texas Water Well Drillers Advisory Council
P.O. Box 13087
Austin, TX 78711-3087
512-239-0530

1) OWNER USACE (Name) ADDRESS 819 Taylor st (Street or RFD) Fort WorthH (City) Tx (State) 76102 (Zip)

2) ADDRESS OF WELL: County Hays (Street, RFD or other) San Marcos (City) Tx (State) (Zip) GRID #

3) TYPE OF WORK (Check): ☐ New Well ☐ Deepening ☐ Reconditioning ☒ Plugging

4) PROPOSED USE (Check): ☐ Monitor ☒ Environmental Soil Boring ☐ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) N

6) WELL LOG: B-3
Date Drilling: Started 4/3 19 96 Completed 4/3 19 96

DIAMETER OF HOLE		
Dia. (in.)	From (ft.)	To (ft.)
7.5	Surface	30.0

7) DRILLING METHOD (Check): ☐ Driven ☐ Air Rotary ☐ Mud Rotary ☐ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☒ Other HSA

From (ft.)	To (ft.)	Description and color of formation material
0	2.5	Tanish loamy Clay
2.5	5.0	Black to Redish brown Clay
5	12	Redish brown Silty Clay
12	20	loamy Clay
20	22	Tan Silty heavely Clay
22	25	Tan to Redish brown clay
25	30	Tan to loamy shaley Clay

TD = 30.0

(Use reverse side if necessary)

8) Borehole Completion (Check): ☐ Open Hole ☐ Straight Wall
N/A ☐ Underreamed ☐ Gravel Packed ☐ Other
If Gravel Packed give interval ... from ft. to ft.

CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casting Screen
		N/A			

9) CEMENTING DATA [Rule 338.44(1)]
Cemented from 0 ft. to 30 ft. No. of sacks used 5
ft. to ft. No. of sacks used
Method used Mud Pump
Cemented by Maxim
Distance to septic system field lines or other concentrated contamination ft.
Method of verification of above distance

10) SURFACE COMPLETION
☐ Specified Surface Slab Installed [Rule 338.44(2)(A)]
☐ Specified Steel Sleeve Installed [Rule 338.44(3)(A)]
☐ Pitless Adapter Used [Rule 338.44(3)(b)]
☐ Approved Alternative Procedure Used [Rule 338.71]

11) WATER LEVEL:
Static level Dry ft. below land surface Date 4/3/96
Artesian flow gpm. Date

12) PACKERS: N/A Type Depth

13) TYPE PUMP: N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other
Depth to pump bowls, cylinder, jet, etc., ft.

14) WELL TESTS: N/A
Type test: ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield: gpm with ft. drawdown after hrs.

15) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable constituents?
☐ Yes ☒ No If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? Depth of strata
Was a chemical analysis made? ☐ Yes ☐ No

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief. I understand that failure to complete items 1 thru 15 will result in the log(s) being returned for completion and resubmittal.

COMPANY NAME Maxim Technologies (Type or print) WELL DRILLER'S LICENSE NO. 3058-M

ADDRESS 2575 Lone Star Dr (Street or RFD) Dallas (City) Tx (State) 75212 (Zip)

(Signed) (Licensed Well Driller) (Signed) (Registered Driller Trainee)

Please attach electric log, chemical analysis, and other pertinent information, if available.

TNRCC-0199 (Rev. 11-01-94)

DRILLER'S COPY

Send original copy by certified mail to: TNRCC, P.O. Box 13087, Austin, TX 78711-3087

Please use black ink.

ATTENTION OWNER: *Confidentiality Privilege Notice on Reverse Side*

State of Texas WELL REPORT

Texas Water Well Drillers Advisory Council
P.O. Box 13087
Austin, TX 78711-3087
512-239-0530

1) OWNER USACE (Name) ADDRESS 819 Taylor st (Street or RFD) Fort Worth (City) TX (State) 76102 (Zip)

2) ADDRESS OF WELL: County Hays (Street, RFD or other) San Marcos (City) TX (State) (Zip) GRID #

3) TYPE OF WORK (Check): ☐ New Well ☐ Deepening ☐ Reconditioning ☒ Plugging

4) PROPOSED USE (Check): ☐ Monitor ☒ Environmental Soil Boring ☐ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5)

6) WELL LOG: B-4
Date Drilling:
Started 5/1 19 96
Completed 5/1 19 96

DIAMETER OF HOLE		
Dia. (in.)	From (ft.)	To (ft.)
7.5	Surface	30'

7) DRILLING METHOD (Check): ☐ Driven ☐ Air Rotary ☐ Mud Rotary ☐ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☒ Other HSA

N

From (ft.)	To (ft.)	Description and color of formation material
0.0	3.0	Lt brown Silty Clay
3.0	11.0	Brown Silty Clay
11.0	13.5	Lt brown silty clay
13.5	16.0	Lt TAN Clay
16.0	18	Lt Gray loam/gravel
18	20	TAN Silty SAND
20	22	TAN Clay w/gravel
22	25	Gray Clay
25	30	TAN to Gray Clay
TD = 30.0		

(Use reverse side if necessary)

8) Borehole Completion (Check): ☐ Open Hole ☐ Straight Wall
N/A ☐ Underreamed ☐ Gravel Packed ☐ Other
If Gravel Packed give interval ... from ft. to ft.

CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casting Screen
		N/A			

9) CEMENTING DATA [Rule 338.44(1)]
Cemented from 0 ft. to 30 ft. No. of sacks used 5
ft. to ft. No. of sacks used
Method used Mud Pump
Cemented by Maxim
Distance to septic system field lines or other concentrated contamination ft.
Method of verification of above distance

13) TYPE PUMP: N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other
Depth to pump bowls, cylinder, jet, etc., ft.

10) SURFACE COMPLETION
☐ Specified Surface Slab Installed [Rule 338.44(2)(A)]
☐ Specified Steel Sleeve Installed [Rule 338.44(3)(A)]
☐ Pitless Adapter Used [Rule 338.44(3)(b)]
☐ Approved Alternative Procedure Used [Rule 338.71]

14) WELL TESTS: N/A
Type test: ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield: gpm with ft. drawdown after hrs.

11) WATER LEVEL:
Static level Dry ft. below land surface Date 5/1/96
Artesian flow gpm. Date

15) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable constituents?
☐ Yes ☒ No If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? Depth of strata
Was a chemical analysis made? ☐ Yes ☐ No

12) PACKERS: N/A Type Depth

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief. I understand that failure to complete items 1 thru 15 will result in the log(s) being returned for completion and resubmittal.

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ADDRESS 2575 Lone Star Dr (Street or RFD) Dallas (City) TX (State) 75212 (Zip)

(Signed) (Licensed Well Driller) (Signed) (Registered Driller Trainee)

Please attach electric log, chemical analysis, and other pertinent information, if available.

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Please use black ink.

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State of Texas WELL REPORT

Texas Water Well Drillers Advisory Council
P.O. Box 13087
Austin, TX 78711-3087
512-239-0530

1) OWNER USACE (Name) ADDRESS 819 Taylor st (Street or RFD) Fort Worth (City) Tx (State) 76102 (Zip)

2) ADDRESS OF WELL: County Hays San Marcos Tx (Street, RFD or other) (City) (State) (Zip) GRID #

3) TYPE OF WORK (Check): ☐ New Well ☐ Deepening ☐ Reconditioning ☒ Plugging

4) PROPOSED USE (Check): ☐ Monitor ☒ Environmental Soil Boring ☐ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) N

6) WELL LOG: B-5
Date Drilling:
Started 5/10 1996
Completed 5/10 1996

DIAMETER OF HOLE		
Dia. (in.)	From (ft.)	To (ft.)
7.5	Surface	30

7) DRILLING METHOD (Check): ☐ Driven ☐ Air Rotary ☐ Mud Rotary ☐ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☒ Other HSA

From (ft.)	To (ft.)	Description and color of formation material
0	1	Sandy Loam (fill)
1	5.5	Brown Silty Clay (fill)
5.5	13.0	Dark Brown Gravelly Clay (fill)
13	14	Black Clay
14	16.5	Tan Clay
16.5	20	Light Gray Clay w/ Gravel
20	30.0	Reddish brown Shaley Clay

TD = 30

(Use reverse side if necessary)

8) Borehole Completion (Check): ☐ Open Hole ☐ Straight Wall
N/A ☐ Underreamed ☐ Gravel Packed ☐ Other
If Gravel Packed give interval ... from ____ ft. to ____ ft.

CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casting Screen
		N/A			

9) CEMENTING DATA [Rule 338.44(1)]
Cemented from 0 ft. to 30 ft. No. of sacks used 5
____ ft. to ____ ft. No. of sacks used ____
Method used Mud Pump
Cemented by Maxim Technologies
Distance to septic system field lines or other concentrated contamination ____ ft.
Method of verification of above distance ____

10) SURFACE COMPLETION
☐ Specified Surface Slab Installed [Rule 338.44(2)(A)]
☐ Specified Steel Sleeve Installed [Rule 338.44(3)(A)]
☐ Pitless Adapter Used [Rule 338.44(3)(b)]
☐ Approved Alternative Procedure Used [Rule 338.71]

11) WATER LEVEL:
Static level Dry ft. below land surface Date 5/10/96
Artesian flow ____ gpm. Date ____

12) PACKERS: N/A Type Depth

13) TYPE PUMP: N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other
Depth to pump bowls, cylinder, jet, etc., ____ ft.

14) WELL TESTS: N/A
Type test: ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield: ____ gpm with ____ ft. drawdown after ____ hrs.

15) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable constituents?
☐ Yes ☒ No If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? ____ Depth of strata ____
Was a chemical analysis made? ☐ Yes ☐ No

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief. I understand that failure to complete items 1 thru 15 will result in the log(s) being returned for completion and resubmittal.

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ADDRESS 2575 Lone Star Dr (Street or RFD) Dallas (City) Tx (State) 75212 (Zip)

(Signed) [signature] (Licensed Well Driller) (Signed) ____ (Registered Driller Trainee)

Please attach electric log, chemical analysis, and other pertinent information, if available.

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State of Texas WELL REPORT

Texas Water Well Drillers Advisory Council
P.O. Box 13087
Austin, TX 78711-3087
512-239-0530

1) OWNER USACE (Name) ADDRESS 819 Taylor st (Street or RFD) Fort Worth (City) Tx (State) 76102 (Zip)

2) ADDRESS OF WELL: County Hays (Street, RFD or other) San Marcos (City) Tx (State) (Zip) GRID #

3) TYPE OF WORK (Check): ☐ New Well ☐ Deepening ☐ Reconditioning ☒ Plugging

4) PROPOSED USE (Check): ☐ Monitor ☒ Environmental Soil Boring ☐ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5)

6) WELL LOG: B-6
Date Drilling:
Started 5/10 19 96
Completed 5/10 19 96

DIAMETER OF HOLE		
Dia. (in.)	From (ft.)	To (ft.)
7.5	Surface	30

7) DRILLING METHOD (Check): ☐ Driven ☐ Air Rotary ☐ Mud Rotary ☐ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☒ Other HSA

N

From (ft.)	To (ft.)	Description and color of formation material
0	3.5	Black Clay
3.5	11	Reddish brown Silty Clay
11	15	Tan Clay
15	17.5	Tan Gravelly Sand
17.5	19	Tan Sandy Clay
19	20	Grayish brown Sandy Clay
20	23	Tan + Gray Clay
23	30	Tan + Gray Shaley Clay

TD = 30

(Use reverse side if necessary)

8) Borehole Completion (Check): ☐ Open Hole ☐ Straight Wall
N/A ☐ Underreamed ☐ Gravel Packed ☐ Other
If Gravel Packed give interval ... from ft. to ft.

CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casting Screen
		N/A			

9) CEMENTING DATA [Rule 338.44(1)]
Cemented from 0 ft. to 30 ft. No. of sacks used 5
ft. to ft. No. of sacks used
Method used Mud Pump
Cemented by Maxim
Distance to septic system field lines or other concentrated contamination ft.
Method of verification of above distance

10) SURFACE COMPLETION
☐ Specified Surface Slab Installed [Rule 338.44(2)(A)]
☐ Specified Steel Sleeve Installed [Rule 338.44(3)(A)]
☐ Pitless Adapter Used [Rule 338.44(3)(b)]
☐ Approved Alternative Procedure Used [Rule 338.71]

11) WATER LEVEL:
Static level Dry ft. below land surface Date 5/10/96
Artesian flow gpm. Date

12) PACKERS: N/A Type Depth

13) TYPE PUMP: N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other
Depth to pump bowls, cylinder, jet, etc., ft.

14) WELL TESTS: N/A
Type test: ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield: gpm with ft. drawdown after hrs.

15) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable constituents?
☐ Yes ☒ No If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? Depth of strata
Was a chemical analysis made? ☐ Yes ☐ No

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief. I understand that failure to complete items 1 thru 15 will result in the log(s) being returned for completion and resubmittal.

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ADDRESS 2575 Lone Star Dr (Street or RFD) Dallas (City) Tx (State) 75212 (Zip)

(Signed) (Licensed Well Driller) (Signed) (Registered Driller Trainee)

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State of Texas WELL REPORT

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P.O. Box 13087
Austin, TX 78711-3087
512-239-0530

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2) ADDRESS OF WELL: County Hays (Street, RFD or other) San Marcos (City) Tx (State) (Zip) GRID #

3) TYPE OF WORK (Check): ☐ New Well ☐ Deepening ☐ Reconditioning ☒ Plugging

4) PROPOSED USE (Check): ☐ Monitor ☒ Environmental Soil Boring ☐ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5)

6) WELL LOG: B-7
Date Drilling:
Started 5/16 19 96
Completed 5/16 19 96

DIAMETER OF HOLE		
Dia. (in.)	From (ft.)	To (ft.)
7.5	Surface	30

7) DRILLING METHOD (Check): ☐ Driven ☐ Air Rotary ☐ Mud Rotary ☐ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☒ Other HSA

N

From (ft.)	To (ft.)	Description and color of formation material
0	4.5	Black Tan Gravelly Clay
4.5 -	8	Redish brown Silty Clay
8 -	10	Tan Silty Clay
10 -	13	Red Clay
13 -	18.5	Tan Clay Gravelly Clay
18.5 -	23	Gray Silty Clay
23 -	25	Lt brown to Tan Gray Shale
25 -	30	Lt Gray + Red Clay Shale

TD = 30.0

(Use reverse side if necessary)

8) Borehole Completion (Check): ☐ Open Hole ☐ Straight Wall
N/A ☐ Underreamed ☐ Gravel Packed ☐ Other
If Gravel Packed give interval ... from ft. to ft.

CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casting Screen
		N/A			

9) CEMENTING DATA [Rule 338.44(1)]
Cemented from 0 ft. to 30 ft. No. of sacks used 5
ft. to ft. No. of sacks used
Method used Mud Pump
Cemented by Maxim Tech
Distance to septic system field lines or other concentrated contamination ft.
Method of verification of above distance

10) SURFACE COMPLETION
☐ Specified Surface Slab Installed [Rule 338.44(2)(A)]
☐ Specified Steel Sleeve Installed [Rule 338.44(3)(A)]
☐ Pitless Adapter Used [Rule 338.44(3)(b)]
☐ Approved Alternative Procedure Used [Rule 338.71]

11) WATER LEVEL:
Static level Dry ft. below land surface Date 5/16/96
Artesian flow gpm. Date

12) PACKERS: N/A Type Depth

13) TYPE PUMP: N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other
Depth to pump bowls, cylinder, jet, etc., ft.

14) WELL TESTS: N/A
Type test: ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield: gpm with ft. drawdown after hrs.

15) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable constituents?
☐ Yes ☒ No If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? Depth of strata
Was a chemical analysis made? ☐ Yes ☐ No

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief. I understand that failure to complete items 1 thru 15 will result in the log(s) being returned for completion and resubmittal.

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(Signed) (Licensed Well Driller) (Signed) (Registered Driller Trainee)

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State of Texas WELL REPORT

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P.O. Box 13087
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512-239-0530

1) OWNER USACE (Name) ADDRESS 819 Taylor St. (Street or RFD) Fort Worth (City) Tx (State) 76102 (Zip)

2) ADDRESS OF WELL: County Hays (Street, RFD or other) San Marcos (City) Tx (State) (Zip) GRID # ____

3) TYPE OF WORK (Check): ☐ New Well ☐ Deepening ☐ Reconditioning ☒ Plugging

4) PROPOSED USE (Check): ☐ Monitor ☒ Environmental Soil Boring ☐ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5)

6) WELL LOG: B-8
Date Drilling:
Started 5/10 1996
Completed 5/10 1996

DIAMETER OF HOLE

Dia. (in.)	From (ft.)	To (ft.)
7.5	Surface	30

7) DRILLING METHOD (Check): ☐ Driven ☐ Air Rotary ☐ Mud Rotary ☐ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☒ Other HSA

N

From (ft.)	To (ft.)	Description and color of formation material
0	3.5	Tanish/Gray Clay w/Gravel w/Ls. + Wood (Fill)
3.5	5.0	Black Clay
5.0	10	Tan to Reddish brown Silty Clay
10	15	Lt brown silty Clay
15	21	Lt Gray to brown Sand
21	25	Gray Reddish brown gravely Clay
25	30	" " " Shaley Clay

TD = 30

(Use reverse side if necessary)

8) Borehole Completion (Check): ☐ Open Hole ☐ Straight Wall
N/A ☐ Underreamed ☐ Gravel Packed ☐ Other ____
If Gravel Packed give interval ... from ____ ft. to ____ ft.

CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casting Screen
		N/A			

9) CEMENTING DATA [Rule 338.44(1)]
Cemented from 0 ft. to 30 ft. No. of sacks used 5
____ ft. to ____ ft. No. of sacks used ____
Method used Mud Pump
Cemented by Maxim
Distance to septic system field lines or other concentrated contamination ____ ft.
Method of verification of above distance ____

10) SURFACE COMPLETION
☐ Specified Surface Slab Installed [Rule 338.44(2)(A)]
☐ Specified Steel Sleeve Installed [Rule 338.44(3)(A)]
☐ Pitless Adapter Used [Rule 338.44(3)(b)]
☐ Approved Alternative Procedure Used [Rule 338.71]

11) WATER LEVEL:
Static level Dry ft. below land surface Date 5/10/96
Artesian flow ____ gpm. Date ____

12) PACKERS: N/A Type Depth

13) TYPE PUMP: N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other ____
Depth to pump bowls, cylinder, jet, etc., ____ ft.

14) WELL TESTS: N/A
Type test: ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield: ____ gpm with ____ ft. drawdown after ____ hrs.

15) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable constituents?
☐ Yes ☒ No If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? ____ Depth of strata ____
Was a chemical analysis made? ☐ Yes ☐ No

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(Signed) [signature] (Licensed Well Driller) (Signed) ____ (Registered Driller Trainee)

Please attach electric log, chemical analysis, and other pertinent information, if available.

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Attachment 15
Sample Summary Tables

Soil Sample Tables - Risk-Based Site Assessment*

*Compiled from data gathered by Thompson Professional Group, Inc., from samples collected May 16, 1996, through July 17, 1996.

Soil Sample Descriptions
LPST 108133

Boring Location	Depth (ft. BGS)	Field ID#	Lab ID#	Date Sampled	Time Sampled	Parameters Analyzed	PID Reading
Boring 1	22	B1-1022	9605D61-01	5/14/96	10:58 AM	BTEX, TPH, PAHs	1041ppm
Boring 1	26.5	B1-1026	9605D61-03	5/14/96	11:04 AM	BTEX, TPH, PAHs	836 ppm
Boring 1	35	B1-1035	9605D61-02	5/14/96	11:20 AM	BTEX, TPH, PAHs	195 ppm
Boring 2	17	B2-2117	9605D61-05	5/15/96	11:43 AM	BTEX, TPH, PAHs	34.7 ppm
Boring 2	21.5	B2-2121	9605D61-06	5/15/96	9:15 AM	BTEX, TPH, PAHs	51.2 ppm
Boring 2	30	B2-2130	9605D61-04	5/15/96	11:25 AM	BTEX, TPH, PAHs	4.4 ppm
Boring 3	17	B3-3217	9605D61-08	5/15/96	3:34 PM	BTEX, TPH, PAHs	5.9 ppm
Boring 3	22	B3-3222	9605D61-09	5/15/96	3:35 PM	BTEX, TPH, PAHs	15.6 ppm
Boring 3	30	B3-3230	9605D61-07	5/15/96	11:25 AM	BTEX, TPH, PAHs	4.2 ppm
Boring 4	16	B4-4316	9605D61-11	5/15/96	4:25 PM	BTEX, TPH, PAHs	42.0 ppm
Boring 4	18.5	B4-43.8	9605D61-12	5/15/96	2:50 PM	BTEX, TPH, PAHs	70.9 ppm
Boring 4	30	B4-4330	9605D61-10	5/15/96	3:10 PM	BTEX, TPH, PAHs	25.5 ppm
Boring 5	14	B5-5414	9605D61-15	5/16/96	8:55 AM	BTEX, TPH, PAHs	686 ppm
Boring 5	17	B5-5417	9605D61-14	5/16/96	11:44 AM	BTEX, TPH, PAHs	1437 ppm
Boring 5	20.5	B5-5420	9605D61-16	5/16/96	9:15 AM	BTEX, TPH, PAHs	124 ppm
Boring 5	30	B5-5430	9605D61-13	5/16/96	10:55 AM	BTEX, TPH, PAHs	49.1 ppm
Boring 6	17	B6-6517	9605D61-18	5/16/96	1:37 PM	BTEX, TPH, PAHs	178 ppm
Boring 6	20	B6-6520	9605D61-19	5/16/96	10:55 AM	BTEX, TPH, PAHs	382 ppm
Boring 6	30 ft.	B6-6530	9605D61-17	5/16/96	10:45 AM	BTEX, TPH, PAHs	42.8 ppm
Boring 7	17	B7-7617	9605952-03	5/16/96	5:08 PM	BTEX, TPH, PAHs	31.0 ppm
Boring 7	22	B7-7622	9605952-01	5/16/96	2:33 PM	BTEX, TPH, PAHs	68.7 ppm
Boring 7	30	B7-7630	9605952-02	5/16/96	2:47 PM	BTEX, TPH, PAHs	23.6 ppm
Boring 8	5	B8-8705	9605952-07	5/17/96	8:45 AM	BTEX, TPH, PAHs	150 ppm
Boring 8	17	B8-8717	9605952-05	5/16/96	5:50 PM	BTEX, TPH, PAHs	75 ppm
Boring 8	20.5	B8-8720	9605952-06	5/16/96	4:30 PM	BTEX, TPH, PAHs	52 ppm
Boring 8	30	B7-8730	9605952-04	5/16/96	4:47 PM	BTEX, TPH, PAHs	9 ppm

Ground Water Sample Descriptions
LPST 108133

Monitoring Well	Field ID#	Lab ID#	Date Sampled	Time Sampled	Other Notes	Parameters Analyzed
MW 1	G1-1234	9605D61-20	5/16/96	11:05 AM	Inital Well Sample	BTEX
MW 1	G1-3234	9605D61-21	5/16/96	3:15 PM	Rinsate Blank	BTEX
MW 1	G1-4234	9605D61-22	5/16/96	11:25 AM	Rinsate Blank	BTEX
MW 1	G1-5234	9605D61-23	5/16/96	11:10 AM	Inital Well Sample	TPH
MW 1	G1-7234	9605D61-24	5/16/96	3:20 PM	Rinsate Blank	TPH
MW 1	G1-8234	9605D61-25	5/16/96	11:25 AM	Rinsate Blank	TPH
MW 1	MW-1-7471	9605F42-01	5/30/96	1:13 PM	Well Sample	BTEX
MW 1	MW-1-7472	9605F42-02	5/30/96	1:15 PM	Duplicate of 7471	BTEX
MW 1	MW-1-7473	9605F42-03	5/30/96	1:18 PM	Well Sample	PAHs
MW 1	MW1-7480	9607861-01	7/17/96	2:30 PM	Blank	TDS
MW 1	MW1-7481	9607861-02	7/17/96	3:00 PM	Well Sample	TDS

SOIL & GROUNDWATER SAMPLING ANALYTICAL RESULTS

Former Gary Air Force Base LPST # 108133				Soil Boring/Ground Water Monitoring Well No. 1							Caldwell County, Texas
Compound	Soil Samples			Groundwater Samples							
	B1-1022	B1-1035	B1-1026	G1-1234	G1-3234	G1-4234	G1-5234	G1-7234	G1-8234	MW-1-7471	MW-1-7472
BTEX	[µg/kg]	[µg/kg]	[µg/kg]	[µg/L]	[µg/L]	[µg/L]				[µg/L]	[µg/L]
Benzene	< 1	39	300	1500	<1	<1				1000	1100
Toluene	< 1	<5	<50	8	<1	<1				9	7
Ethylbenzene	2	180	1700	170	<1	<1				110	110
Total Xylene	6	77	1750	<5	<1	1				<5	<5
Total BTEX	8	296	3750	1678	<1	1				1119	1217
TPH	[mg/kg]	[mg/kg]	[mg/kg]				[mg/L]	[mg/L]	[mg/L]		
	17	34	270				7	<0.5	<0.5		
PAH	[µg/kg]	[µg/kg]	[µg/kg]								
Naphthalene	<60	32	900							170	
Acenaphthylene	<30	< 1.5	<150							<10	
Acenaphthene	<100	< 5	<500							<20	
Fluorene	<112	< 5.6	<560							<40	
Phenanthrene	<104	< 5.2	<520							<40	
Anthracene	<90	< 4.5	<450							<20	
Fluoranthene	<76	< 3.8	<380							<20	
Pyrene	<70	< 3.5	<350							<20	
Chrysene	<54	< 2.7	<270							<16	
Benzo a anthracene	<54	< 2.7	<270							<16	
Benzo b fluoranthene	<44	< 2.2	<220							<12	
Benzo k fluoranthene	<48	< 2.4	<240							<14	
Benzo a pyrene	<22	< 1.1	<110							<6	
Dibenzo a,h anthracene	<48	< 2.4	<240							<14	
Benzo g,h,i perylene	<70	< 3.5	<350							<20	
Indeno 1,2,3-cd pyrene	<52	< 2.6	<260							<16	

SOIL & GROUNDWATER SAMPLING ANALYTICAL RESULTS

Former Gary Air Force Base LPST # 108133				Soil Boring/Ground Water Monitoring Well No. 2	Caldwell County, Texas
Compound	Soil Samples			Groundwater Samples	
	B2-2130	B2-2117	B2-2121		
BTEX	[µg/kg]	[µg/kg]	[µg/kg]		
Benzene	< 1	2	< 1		
Toluene	< 1	2	< 1		
Ethylbenzene	< 1	4	< 1		
Total Xylene	< 1	3	< 1		
Total BTEX	< 1	11	< 1		
TPH	[mg/kg]	[mg/kg]	[mg/kg]		
	13	32	<10		
PAH	[µg/kg]	[µg/kg]	[µg/kg]		
Naphthalene	< 3	< 3	< 3		
Acenaphthylene	< 1.5	< 1.5	< 1.5		
Acenaphthene	< 5	< 5	< 5		
Fluorene	< 5.6	< 5.6	< 5.6		
Phenanthrene	< 5.2	< 5.2	< 5.2		
Anthracene	< 4.5	< 4.5	< 4.5		
Fluoranthene	< 3.8	< 3.8	< 3.8		
Pyrene	< 3.5	< 3.5	< 3.5		
Chrysene	< 2.7	< 2.7	< 2.7		
Benzo a anthracene	< 2.7	< 2.7	< 2.7		
Benzo b fluoranthene	< 2.2	< 2.2	< 2.2		
Benzo k fluoranthene	< 2.4	< 2.4	< 2.4		
Benzo a pyrene	< 1.1	< 1.1	< 1.1		
Dibenzo a,h anthracene	< 2.4	< 2.4	< 2.4		
Benzo g,h,i perylene	< 3.5	< 3.5	< 3.5		
Indeno 1,2,3-cd pyrene	< 2.6	< 2.6	< 2.6		

SOIL & GROUNDWATER SAMPLING ANALYTICAL RESULTS

Former Gary Air Force Base LPST # 108133				Soil Boring/Ground Water Monitoring Well No. 3	Caldwell County, Texas
Compound	Soil Samples			Groundwater Samples	
	B3-3230	B3-3217	B3-3222		
BTEX	[µg/kg]	[µg/kg]	[µg/kg]		
Benzene	< 1	< 1	< 1		
Toluene	< 1	< 1	< 1		
Ethylbenzene	< 1	< 1	2		
Total Xylene	< 1	< 1	ND		
Total BTEX	< 1	< 1	2		
TPH	[mg/kg]	[mg/kg]	[mg/kg]		
	<10	<10	<10		
PAH	[µg/kg]	[µg/kg]	[µg/kg]		
Naphthalene	< 3	< 15	< 15		
Acenaphthylene	< 1.5	< 7.5	< 7.5		
Acenaphthene	< 5	< 25	< 25		
Fluorene	< 5.6	< 28.0	< 28.0		
Phenanthrene	< 5.2	< 26.0	< 26.0		
Anthracene	< 4.5	< 22.5	< 22.5		
Fluoranthene	< 3.8	< 19.0	< 19.0		
Pyrene	< 3.5	< 17.5	< 17.5		
Chrysene	< 2.7	< 13.5	< 13.5		
Benzo a anthracene	< 2.7	< 13.5	< 13.5		
Benzo b fluoranthene	< 2.2	< 11.0	< 11.0		
Benzo k fluoranthene	< 2.4	< 12.0	< 12.0		
Benzo a pyrene	< 1.1	< 5.5	< 5.5		
Dibenzo a,h anthracene	< 2.4	< 12.0	< 12.0		
Benzo g,h,i perylene	< 3.5	< 17.5	< 17.5		
Indeno 1,2,3-cd pyrene	< 2.6	< 13.0	< 13.0		

SOIL & GROUNDWATER SAMPLING ANALYTICAL RESULTS

Former Gary Air Force Base LPST # 108133				Soil Boring/Ground Water Monitoring Well No. 4	Caldwell County, Texas
Compound	Soil Samples			Groundwater Samples	
	B4-4330	B4-4316	B4-4318		
BTEX	[µg/kg]	[µg/kg]	[µg/kg]		
Benzene	< 1	< 1	<5		
Toluene	< 1	< 1	<5		
Ethylbenzene	< 1	< 1	110		
Total Xylene	2	< 1	135		
Total BTEX	2	< 1	245		
TPH	[mg/kg]	[mg/kg]	[mg/kg]		
	<10	12	150		
PAH	[µg/kg]	[µg/kg]	[µg/kg]		
Naphthalene	< 15	< 3	<60		
Acenaphthylene	< 7.5	< 1.5	<30		
Acenaphthene	< 25	< 5	<100		
Fluorene	< 28.0	< 5.6	<112		
Phenanthrene	< 26.0	< 5.2	<104		
Anthracene	< 22.5	< 4.5	<90		
Fluoranthene	< 19.0	< 3.8	<76		
Pyrene	< 17.5	< 3.5	<70		
Chrysene	< 13.5	< 2.7	120		
Benzo a anthracene	< 13.5	< 2.7	<54		
Benzo b fluoranthene	< 11.0	< 2.2	<44		
Benzo k fluoranthene	< 12.0	< 2.4	<48		
Benzo a pyrene	< 5.5	< 1.1	<22		
Dibenzo a,h anthracene	< 12.0	< 2.4	<48		
Benzo g,h,i perylene	< 17.5	< 3.5	<70		
Indeno 1,2,3-cd pyrene	< 13.0	< 2.6	<52		

SOIL & GROUNDWATER SAMPLING ANALYTICAL RESULTS

Former Gary Air Force Base LPST # 108133					Soil Boring/Ground Water Monitoring Well No. 5	Caldwell County, Texas
Compound	Soil Samples				Groundwater Samples	
	B5-5430	B5-5417	B5-5414	B5-5420		
BTEX	[µg/kg]	[µg/kg]	[µg/kg]	[µg/kg]		
Benzene	18	630	67	10		
Toluene	19	1700	660	<10		
Ethylbenzene	5	11000	580	160		
Total Xylene	25	20200	2100	1880		
Total BTEX	67	33530	3407	2050		
TPH	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]		
	<10	4300	62	610		
PAH	[µg/kg]	[µg/kg]	[µg/kg]	[µg/kg]		
Naphthalene	< 15	2000	<300	1700		
Acenaphthylene	< 7.5	<30	<150	<30		
Acenaphthene	< 25	<100	<500	<100		
Fluorene	< 28.0	<112	<560	<112		
Phenanthrene	< 26.0	<104	1900	<104		
Anthracene	< 22.5	<90	480	<90		
Fluoranthene	< 19.0	<76	2200	<76		
Pyrene	< 17.5	<70	1300	<70		
Chrysene	< 13.5	74	590	<54		
Benzo a anthracene	< 13.5	<54	780	<54		
Benzo b fluoranthene	< 11.0	<44	500	<44		
Benzo k fluoranthene	< 12.0	<48	<240	<48		
Benzo a pyrene	< 5.5	<22	<110	<22		
Dibenzo a,h anthracene	< 12.0	<48	<240	<48		
Benzo g,h,i perylene	< 17.5	<70	<350	<70		
Indeno 1,2,3-cd pyrene	< 13.0	<52	<260	<52		

SOIL & GROUNDWATER SAMPLING ANALYTICAL RESULTS

Former Gary Air Force Base LPST # 108133				Soil Boring/Ground Water Monitoring Well No. 6	Caldwell County, Texas
Compound	Soil Samples			Groundwater Samples	
	B6-6530	B6-6517	B6-6520		
BTEX	[µg/kg]	[µg/kg]	[µg/kg]		
Benzene	15	<10	60		
Toluene	<5	<10	<50		
Ethylbenzene	<5	14	2500		
Total Xylene	<5	41	2630		
Total BTEX	15	55	5190		
TPH	[mg/kg]	[mg/kg]	[mg/kg]		
	15	190	6300		
PAH	[µg/kg]	[µg/kg]	[µg/kg]		
Naphthalene	4	<150	2100		
Acenaphthylene	< 1.5	<75	<375		
Acenaphthene	< 5	<250	<1250		
Fluorene	< 5.6	<280	<1400		
Phenanthrene	< 5.2	<260	<1300		
Anthracene	< 4.5	<225	<1125		
Fluoranthene	< 3.8	<190	<950		
Pyrene	< 3.5	<175	<875		
Chrysene	< 2.7	<135	<675		
Benzo a anthracene	< 2.7	<135	<675		
Benzo b fluoranthene	< 2.2	<110	<550		
Benzo k fluoranthene	< 2.4	<120	<600		
Benzo a pyrene	< 1.1	<55	<275		
Dibenzo a,h anthracene	< 2.4	<120	<600		
Benzo g,h,i perylene	< 3.5	<175	<875		
Indeno 1,2,3-cd pyrene	< 2.6	<130	<650		

SOIL & GROUNDWATER SAMPLING ANALYTICAL RESULTS

Former Gary Air Force Base LPST # 108133				Soil Boring/Ground Water Monitoring Well No. 7	Caldwell County, Texas
Compound	Soil Samples			Groundwater Samples	
	B7-7622	B7-7630	B7-7617		
BTEX	[µg/kg]	[µg/kg]	[µg/kg]		
Benzene	<10	< 1	< 1		
Toluene	24	< 1	< 1		
Ethylbenzene	190	< 1	3		
Total Xylene	230	< 1	8		
Total BTEX	444	< 1	11		
TPH	[mg/kg]	[mg/kg]	[mg/kg]		
	330	<10	<10		
PAH	[µg/kg]	[µg/kg]	[µg/kg]		
Naphthalene	< 3	< 3	< 3		
Acenaphthylene	< 1.5	< 1.5	< 1.5		
Acenaphthene	< 5	< 5	< 5		
Fluorene	< 5.6	< 5.6	< 5.6		
Phenanthrene	< 5.2	< 5.2	< 5.2		
Anthracene	< 4.5	< 4.5	< 4.5		
Fluoranthene	< 3.8	< 3.8	< 3.8		
Pyrene	< 3.5	< 3.5	< 3.5		
Chrysene	< 2.7	< 2.7	< 2.7		
Benzo a anthracene	< 2.7	< 2.7	< 2.7		
Benzo b fluoranthene	< 2.2	< 2.2	< 2.2		
Benzo k fluoranthene	< 2.4	< 2.4	< 2.4		
Benzo a pyrene	< 1.1	< 1.1	< 1.1		
Dibenzo a,h anthracene	< 2.4	< 2.4	< 2.4		
Benzo g,h,i perylene	10	< 3.5	< 3.5		
Indeno 1,2,3-cd pyrene	< 2.6	< 2.6	< 2.6		

SOIL & GROUNDWATER SAMPLING ANALYTICAL RESULTS

Former Gary Air Force Base LPST # 108133					Soil Boring/Ground Water Monitoring Well No. 8	Caldwell County, Texas
Compound	Soil Samples				Groundwater Samples	
	B8-8730	B8-8717	B8-8720	B8-8705		
BTEX	[µg/kg]	[µg/kg]	[µg/kg]	[µg/kg]		
Benzene	< 1	<10	<200	<5		
Toluene	32	<10	790	<5		
Ethylbenzene	2	<10	44000	<5		
Total Xylene	3	<10	25000	<5		
Total BTEX	37	<10	69790	<5		
TPH	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]		
	<10	130	1800	46		
PAH	[µg/kg]	[µg/kg]	[µg/kg]	[µg/kg]		
Naphthalene	< 15	<30	6200	<3000		
Acenaphthylene	< 7.5	<15	<750	<1500		
Acenaphthene	< 25	<50	<2500	<5000		
Fluorene	< 28.0	<56	<2800	<5600		
Phenanthrene	< 26.0	<52	<2600	<5200		
Anthracene	< 22.5	<45	<2250	<4500		
Fluoranthene	27	<38	<1900	<3800		
Pyrene	24	<35	<1750	3600		
Chrysene	< 13.5	<27	<1350	<2700		
Benzo a anthracene	< 13.5	<27	<1350	<2700		
Benzo b fluoranthene	< 11.0	<22	<1100	5900		
Benzo k fluoranthene	< 12.0	<24	<1200	3100		
Benzo a pyrene	< 5.5	<11	<550	<1100		
Dibenzo a,h anthracene	< 12.0	<24	<1200	<2400		
Benzo g,h,i perylene	< 17.5	<35	<1750	3500		
Indeno 1,2,3-cd pyrene	< 13.0	<26	<1300	<2600		

Sample Tables - Tank Removal*

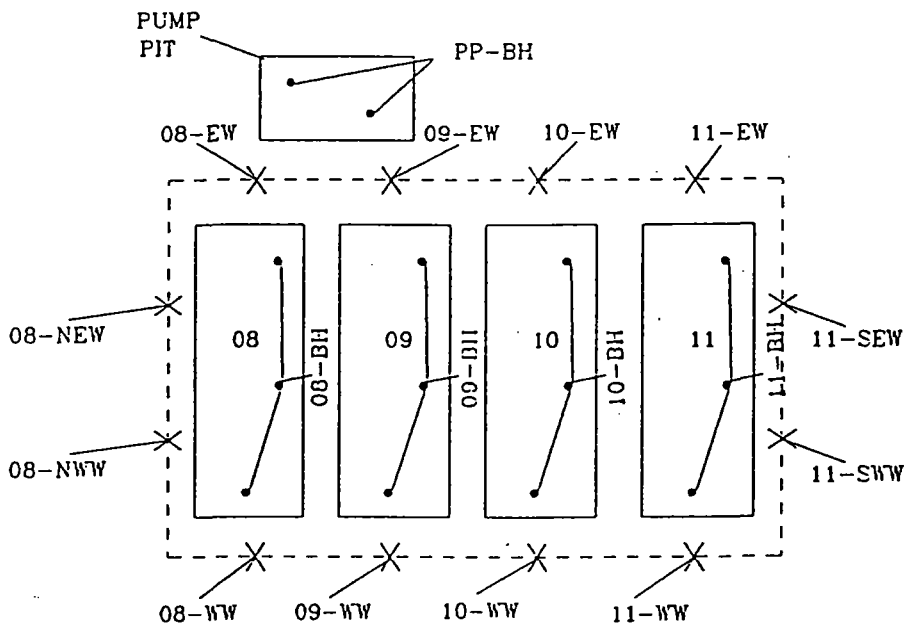
*From report titled Petroleum Storage Tank Site Assessment and Remedial Activities, *Former Gary Air Force Base, Site No. 10-350 (Tanks 8-11), San Marcos (Caldwell County), Texas.* Prepared by Perry Williams Inc. for the U.S. Army Corps of engineers, dated March 17, 1995

SAMPLE LOCATIONS

SPA	SPG
SPB	SPH
SPC	SPI
SPD	SPJ
SPE	SPK
SPF	SPL

NOTE:
600 cyds SAMPLED ON
50 cyds BASIS 12 SAMPLES

STOCKPILE : 72'x20'x8'



X = IN-PLACE SAMPLE LOCATIONS

• = BOTTOM HOLE COMPOSITE LOCATIONS

TANKHOLD : 50'x30'x11'

PROJECT NAME: GARY AFB
SITE 10-350
D.O.# 0008

FIGURE 5

PERRY WILLIAMS, INC.
P. O. BOX 30206
AMARILLO, TEXAS 79120

SCALE 1" = 15'

SAMPLE TESTING RESULTS

Contract No: DACA63-92-D-0047 Site No: Gary AFB #10350 Tanks 8-11 San Marcos, TX Zone: 4

Order No: 0008 Sampler: Mike Soto

Date Sampled	Lab ID#	Field Description	Matrix	TRPH	BTEX	Lead
4/20/94	35518	GAFB-10-350-08-BH	Soil	<10 ppm	62.5 ppm	5.9 ppm
4/20/94	35523	GAFB-10-350-08-NWW	Soil	70 ppm	<2.4 ppm	38 ppm
4/20/94	35524	GAFB-10-350-08-NEW	Soil	29 ppm	<2.4 ppm	28 ppm
4/20/94	35527	GAFB-10-350-08-EW	Soil	74 ppm	<2.4 ppm	56 ppm
4/20/94	35531	GAFB-10-350-08-WW	Soil	<10 ppm	<2.4 ppm	9.7 ppm
4/20/94	35520	GAFB-10-350-09-BH	Soil	86 ppm	<2.4 ppm	15 ppm
4/20/94	35528	GAFB-10-350-09-EW	Soil	<10 ppm	<2.4 ppm	6.5 ppm
4/20/94	35532	GAFB-10-350-09-WW	Soil	<10 ppm	<2.4 ppm	5.7 ppm
4/20/94	35521	GAFB-10-350-10-BH	Soil	3800 ppm	<2.4 ppm	8.9 ppm
4/20/94	35529	GAFB-10-350-10-EW	Soil	<10 ppm	<2.4 ppm	14 ppm
4/20/94	35533	GAFB-10-350-10-WW	Soil	780 ppm	<2.4 ppm	6.4 ppm
4/20/94	35522	GAFB-10-350-11-BH	Soil	6500 ppm	2.0 ppm	10 ppm
4/20/94	35525	GAFB-10-350-11-SWW	Soil	16 ppm	<2.4 ppm	6.9 ppm
4/20/94	35526	GAFB-10-350-11-SEW	Soil	101 ppm	<2.4 ppm	8.5 ppm
4/20/94	35530	GAFB-10-350-11-EW	Soil	<10 ppm	<2.4 ppm	6.4 ppm

TABLE 1

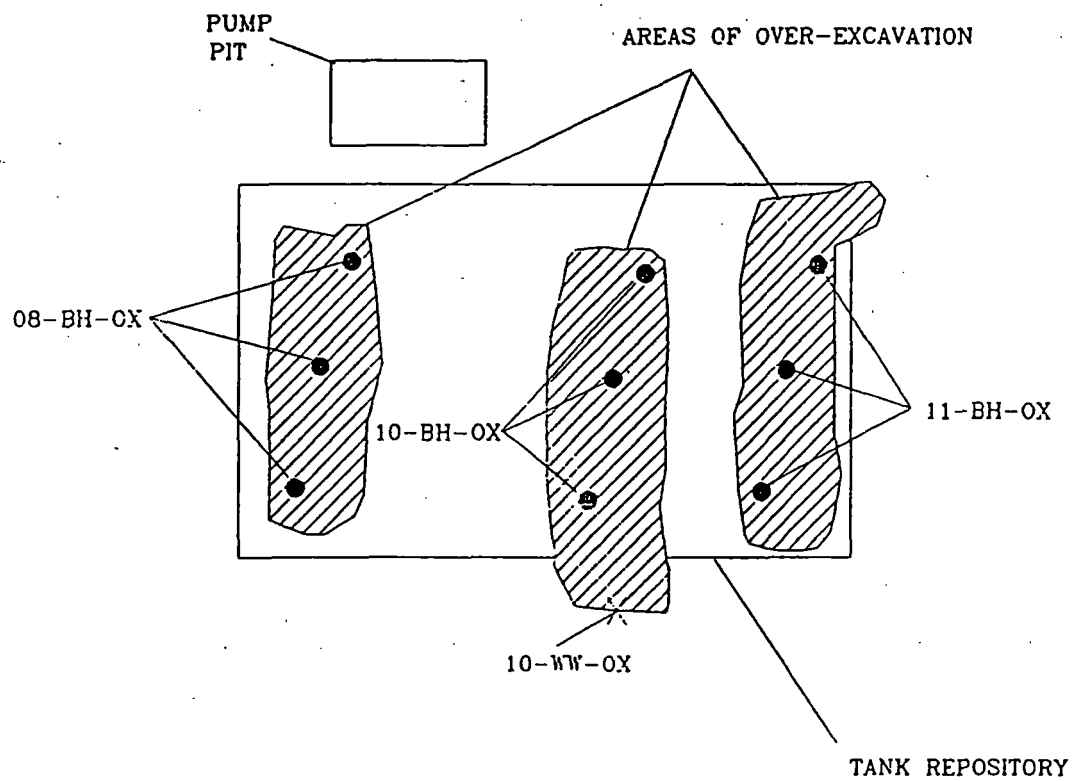
SAMPLE TESTING RESULTS

Contract No: DACA63-92-D-0047 Site No: Gary AFB #10350 Tanks 8-11 San Marcos, TX Zone: 4

Order No: 0008 Sampler: Mike Soto

Date Sampled	Lab ID#	Field Description	Matrix	TRPH	BTEX	Lead
4/20/94	35534	GAFB-10-350-11-WW	Soil	<10 ppm	<2.4 ppm	6.1 ppm
4/20/94	35519	GAFB-10-350-08-BH/QC	Soil	<10 ppm	33.5 ppm	5.5 ppm

OVER-EXCAVATION SAMPLE LOCATIONS



● = BOTTOM HOLE COMPOSITE SAMPLE LOCATIONS

X = IN-PLACE SAMPLE LOCATIONS

PROJECT NAME: GARY AFB
SITE 10-350 (TANKS 8-11)
D.O.# 0008

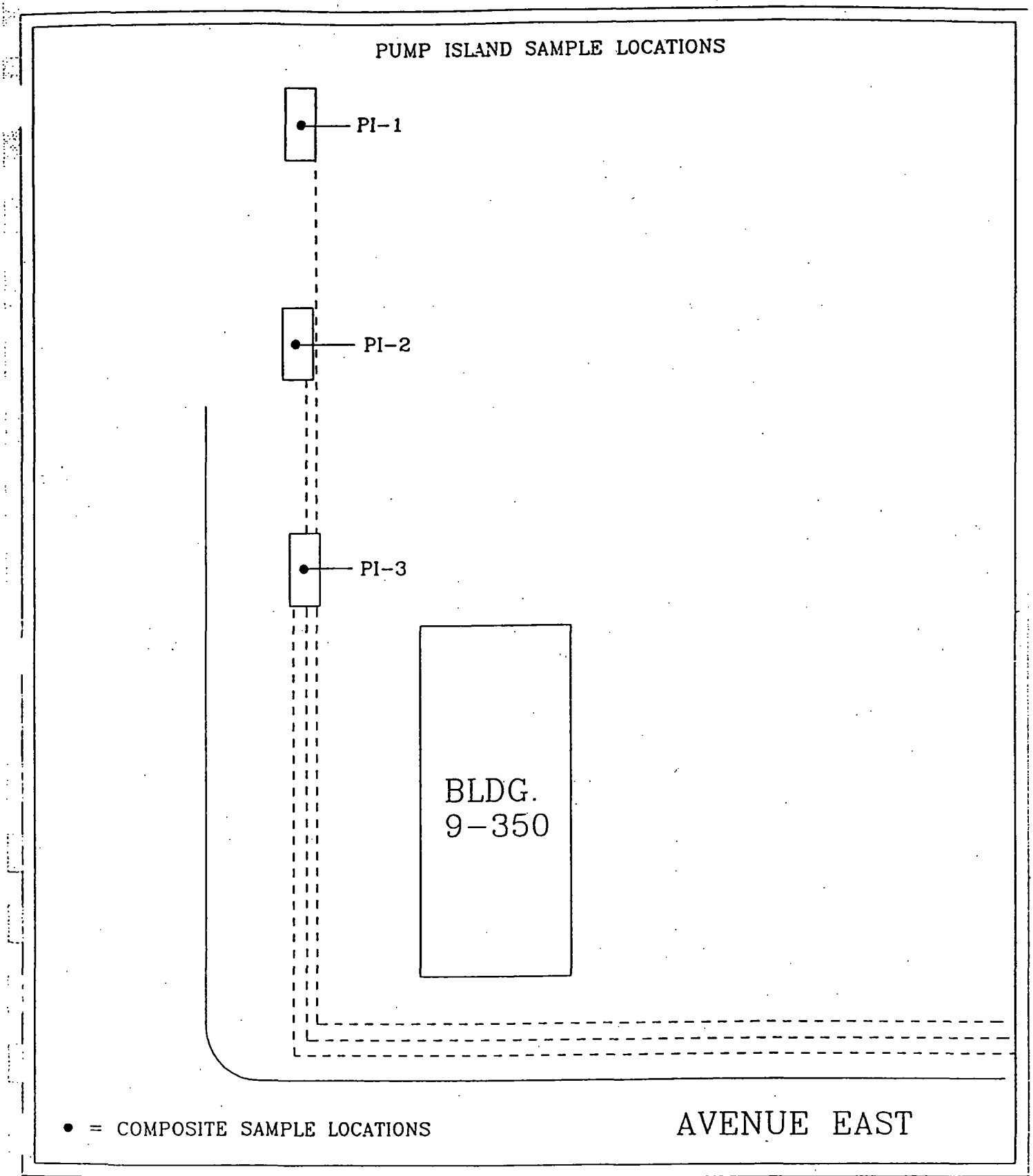
N

FIGURE 6

PERRY WILLIAMS, INC.
P. O. BOX 30206
AMARILLO, TEXAS 79120

0 15'

SCALE 1' = 15'



PROJECT NAME:
GARY AFB
10-350 (TANKS 8-11)
D.O. 0008

N

FIGURE 7

WC ENVIRONMENTAL GROUP
P.O. BOX 30206,
AMARILLO, TX 79120

NOT TO SCALE

SAMPLE TESTING RESULTS

Contract No: DACA63-92-D-0047 Site No: Gary AFB #10350 Tanks 8-11 San Marcos, TX Zone: 4

Order No: 0008 Sampler: Mike Soto

Date Sampled	Lab ID#	Field Description	Matrix	TRPH	BTEX	Lead
4/30/94	404045-4	GAFB-10-350-PI-1	Soil	105 ppm	<0.6 ppm	148.8 ppm
4/30/94	404045-5	GAFB-10-350-PI-2	Soil	<5 ppm	<0.6 ppm	106.1 ppm
4/30/94	404045-6	GAFB-10-350-PI-3	Soil	20 ppm	<0.6 ppm	173.4 ppm
4/30/94	404045-1	TRIP BLANK	Water	N/A	<0.030 ppm	N/A
4/30/94	404045-2	GAFB-10-350-PI-1/RB	Water	<0.200 ppm	<0.030 ppm	<0.1 ppm
4/30/94	404045-3	GAFB-10-350-PI-1/QC	Soil	14 ppm	<0.6 ppm	173.1 ppm

SAMPLE TESTING RESULTS

Contract No: DACA63-92-D-0047 Site No: Gary AFB #10350 Tanks 8-11 San Marcos, TX Zone: 4

Order No: 0008 Sampler: Mike Soto

Date Sampled	Lab ID#	Field Description	Matrix	TCLP Lead (MG/L)
4/30/94	405045-4	GAFB-10-350-PI-1	Soil	<0.1
4/30/94	405045-5	GAFB-10-350-PI-2	Soil	<0.1
4/30/94	405045-6	GAFB-10-350-PI-3	Soil	<0.1

Sample Tables - Excavated Soil Stockpiles*

*From report titled Petroleum Storage Tank Site Assessment and Remedial Activities, *Former Gary Air Force Base, Site No. 10-350 (Tanks 8-11), San Marcos (Caldwell County), Texas.* Prepared by Perry Williams Inc. for the U.S. Army Corps of engineers, dated March 17, 1995

SAMPLE TESTING RESULTS

Contract No: DACA63-92-D-0047 Site No: Gary AFB #10350 Tanks 8-11 San Marcos, TX Zone: 4

Order No: 0008 Sampler: Mike Soto

Date Sampled	Lab ID#	Field Description	Matrix	TRPH	BTEX	Lead
4/20/94	35505	GAFB-10-350-SPA	Soil	<10 ppm	<2.4 ppm	11 ppm
4/20/94	35507	GAFB-10-350-SPB	Soil	130 ppm	<2.4 ppm	27 ppm
4/20/94	35508	GAFB-10-350-SPC	Soil	130 ppm	<2.4 ppm	31 ppm
4/20/94	35509	GAFB-10-350-SPD	Soil	<10 ppm	<2.4 ppm	31 ppm
4/20/94	35510	GAFB-10-350-SPE	Soil	96 ppm	<2.4 ppm	29 ppm
4/20/94	35511	GAFB-10-350-SPF	Soil	360 ppm	<2.4 ppm	18 ppm
4/20/94	35512	GAFB-10-350-SPG	Soil	79 ppm	<2.4 ppm	26 ppm
4/20/94	35513	GAFB-10-350-SPH	Soil	140 ppm	<2.4 ppm	32 ppm
4/20/94	35514	GAFB-10-350-SPI	Soil	29 ppm	<2.4 ppm	17 ppm
4/20/94	35515	GAFB-10-350-SPJ	Soil	480 ppm	<2.4 ppm	19 ppm
4/20/94	35516	GAFB-10-350-SPK	Soil	210 ppm	<2.4 ppm	20 ppm
4/20/94	35517	GAFB-10-350-SPL	Soil	38 ppm	<2.4 ppm	27 ppm

SAMPLE TESTING RESULTS

Contract No: DACA63-92-D-0047 Site No: Gary AFB #10350 Tanks 8-11 San Marcos, TX Zone: 4

Order No: 0008 Sampler: Mike Soto

Date Sampled	Lab ID#	Field Description	Matrix	TRPH	BTEX	Lead
6/9/94	2609	GAFB-10-350-SPA-OX	Soil	6560 ppm	<3.31 ppm	14.6 ppm
6/9/94	2610	GAFB-10-350-SPB-OX	Soil	870 ppm	<0.6 ppm	19.2 ppm
6/9/94	2611	GAFB-10-350-SPC-OX	Soil	2260 ppm	<1.76 ppm	12.9 ppm
6/9/94	2612	GAFB-10-350-SPD-OX	Soil	4230 ppm	<0.95 ppm	9.4 ppm
6/9/94	2613	GAFB-10-350-SPE-OX	Soil	<5 ppm	<0.6 ppm	7.6 ppm
6/9/94	2614	GAFB-10-350-SPF-OX	Soil	<5 ppm	12.18 ppm	5.7 ppm

SAMPLE TESTING RESULTS

Contract No: DACA63-92-D-0047 Site No: Gary AFB #10350 Tanks 8-11 San Marcos, TX Zone: 4

Order No: 0008 Sampler: Mike Soto

Date Sampled	Lab ID#	Field Description	Matrix	TRPH	BTEX	Lead
6/23/94	4001	GAFB-10-350-SPE-OX-RS	Soil	2945 ppm	<0.68 ppm	18.2 ppm
6/23/94	4002	GAFB-10-350-SPF-OX-RS	Soil	2140 ppm	<0.6 ppm	17.8 ppm

SAMPLE TESTING RESULTS

Contract No: DACA63-92-D-0047 Site No: Gary AFB #10350 Tanks 8-11 San Marcos, TX Zone: 4

Order No: 0008 Sampler: Mike Soto

Date Sampled	Lab ID#	Field Description	Matrix	TRPH	BTEX	Lead
7/26/94	8408	GAFB-10-350-SPA-OX-RM	Soil	<5 ppm	<0.6 ppm	18.0 ppm
7/26/94	8407	GAFB-10-350-SPC-OX-RM	Soil	900 ppm	<0.6 ppm	17.2 ppm
7/26/94	8406	GAFB-10-350-SPD-OX-RM	Soil	2165 ppm	<0.6 ppm	22.3 ppm
7/26/94	8405	GAFB-10-350-SPE-OX-RM	Soil	55 ppm	<0.6 ppm	17.0 ppm
7/26/94	8404	GAFB-10-350-SPF-OX-RM	Soil	285 ppm	<0.6 ppm	13.9 ppm
7/26/94	8401	TRIP BLANK	Water	N/A	<0.030 ppm	N/A
7/26/94	8402	GAFB-10-350-SPF-OX-RM/RB	Water	<0.200 ppm	<0.030 ppm	<0.1 ppm
7/26/94	8403	GAFB-10-350-SPF-OX-RM/QC	Soil	260 ppm	<0.6 ppm	13.8 ppm

SAMPLE TESTING RESULTS

Contract No: DACA63-92-D-0047 Site No: Gary AFB #10350 Tanks 8-11 San Marcos, TX Zone: 4

Order No: 0008 Sampler: Walter Carlock

Date Sampled	Lab ID#	Field Description	Matrix	TRPH	BTEX	Lead
8/31/94	12401	GAFB-10-350-SPD-OX-RM-2	Soil	45 ppm	N/A	N/A

SAMPLE TESTING RESULTS

Contract No: DACA63-92-D-0047 Site No: Gary AFB #10350 Tanks 8-11 San Marcos, TX Zone: 4

Order No: 0008 Sampler: Mike Soto

Date Sampled	Lab ID#	Field Description	Matrix	TRPH	BTEX	Lead
6/24/94	4003	GAFB-10-350-PP-BH	Soil	900 ppm	<0.6 ppm	5.1 ppm
6/24/94	4004	GAFB-10-350-PP-SPA	Soil	785 ppm	<2.69 ppm	55.2 ppm
6/24/94	4005	GAFB-10-350-PP-SPB	Soil	565 ppm	<0.66 ppm	22.1 ppm

SAMPLE TESTING RESULTS

Contract No: DACA63-92-D-0047 Site No: Gary AFB #10350 Tanks 8-11 San Marcos, TX Zone: 4

Order No: 0008 Sampler: Mike Soto

Date Sampled	Lab ID#	Field Description	Matrix	TCLP Lead (mg/L)
6/24/94	4004	GAFB-10-350-PP-SPA	Soil	<0.1

Sample Tables - Tank Contents*

*From report titled Petroleum Storage Tank Site Assessment and Remedial Activities, *Former Gary Air Force Base, Site No. 10-350 (Tanks 8-11), San Marcos (Caldwell County), Texas*. Prepared by Perry Williams Inc. for the U.S. Army Corps of engineers, dated March 17, 1995

SAMPLE TESTING RESULTS

Contract No: DACA63-92-D-0047 Site No: Gary AFB #10350 Tanks 8-11 San Marcos, TX Zone: 4

Order No: 0008 Sampler: Walter Carlock

Date Sampled	Lab ID#	Field Description	Matrix	TRPH	BTEX	Lead
2/23/94	34224	GAFB-10-350-08-TC	Water	53. ppm	N/A	N/A
2/23/94	34226	GAFB-10-350-09-TC	Water	590. ppm	N/A	N/A
2/23/94	34227	GAFB-10-350-10-TC	Water	140. ppm	N/A	N/A
2/23/94	34225	GAFB-10-350-11-TC	Water	10. ppm	N/A	N/A

SAMPLE TESTING RESULTS

Contract No: DACA63-92-D-0047 Site No: Gary AFB #10350 Tanks 8-11 San Marcos, TX Zone: 4

Order No: 0008 Sampler: Walter Carlock

8 RCRA METALS

Date Sampled	Lab ID#	Field Description	Matrix	Parameter	Value	Units	Analytical Method
2/23/94	34224	GAFB-10-350-08-TC	Water	Total Arsenic	<.042	MG/L	3005/6010
				Total Barium	.25	MG/L	3005/6010
				Total Cadmium	<.002	MG/L	3005/6010
				Total Chromium	<.003	MG/L	3005/6010
				Total Lead	<.021	MG/L	3005/6010
				Total Mercury	<.001	MG/L	3005/7470
				Total Selenium	<.061	MG/L	3005/6010
				Total Silver	<.003	MG/L	3005/6010

SAMPLE TESTING RESULTS

Contract No: DACA63-92-D-0047 Site No: Gary AFB #10350 Tanks 8-11 San Marcos, TX Zone: 4

Order No: 0008 Sampler: Walter Carlock

8 RCRA METALS

Date Sampled	Lab ID#	Field Description	Matrix	Parameter	Value	Units	Analytical Method
2/23/94	34226	GAFB-10-350-09-TC	Water	Total Arsenic	<.042	MG/L	3005/6010
				Total Barium	.25	MG/L	3005/6010
				Total Cadmium	.006	MG/L	3005/6010
				Total Chromium	.008	MG/L	3005/6010
				Total Lead	1.8	MG/L	3005/6010
				Total Mercury	<.001	MG/L	3005/7470
				Total Selenium	<.061	MG/L	3005/6010
				Total Silver	<.003	MG/L	3005/6010

SAMPLE TESTING RESULTS

Contract No: DACA63-92-D-0047 Site No: Gary AFB #10350 Tanks 8-11 San Marcos, TX Zone: 4

Order No: 0008 Sampler: Walter Carlock

8 RCRA METALS

Date Sampled	Lab ID#	Field Description	Matrix	Parameter	Value	Units	Analytical Method
2/23/94	34227	GAFB-10-350-10-TC	Water	Total Arsenic	<.042	MG/L	3005/6010
				Total Barium	.53	MG/L	3005/6010
				Total Cadmium	.015	MG/L	3005/6010
				Total Chromium	<.003	MG/L	3005/6010
				Total Lead	.50	MG/L	3005/6010
				Total Mercury	<.001	MG/L	3005/7470
				Total Selenium	<.061	MG/L	3005/6010
				Total Silver	<.003	MG/L	3005/6010

SAMPLE TESTING RESULTS

Contract No: DACA63-92-D-0047 Site No: Gary AFB #10350 Tanks 8-11 San Marcos, TX Zone: 4

Order No: 0008 Sampler: Walter Carlock

8 RCRA METALS

Date Sampled	Lab ID#	Field Description	Matrix	Parameter	Value	Units	Analytical Method
2/23/94	34225	GAFB-10-350-11-TC	Water	Total Arsenic	<.042	MG/L	3005/6010
				Total Barium	.17	MG/L	3005/6010
				Total Cadmium	.006	MG/L	3005/6010
				Total Chromium	<.003	MG/L	3005/6010
				Total Lead	1.6	MG/L	3005/6010
				Total Mercury	<.001	MG/L	3005/7470
				Total Selenium	<.061	MG/L	3005/6010
				Total Silver	<.003	MG/L	3005/6010

SAMPLE TESTING RESULTS

Contract No: DACA63-92-D-0047 Site No: Gary AFB #10350 Tanks 8-11 San Marcos, TX Zone: 4

Order No: 0008 Sampler: Walter Carlock

PCB (Polychlorinated Biphenyls)

Date Sampled	Lab ID#	Field Description	Matrix	Analyte	MDL	Units	Results	Test Method
2/23/94	34224	GAFB-10-350-08-TC	Water	Aroclor 1016	5.0	UG/L	ND	8080
				Aroclor 1221	5.0	UG/L	ND	8080
				Aroclor 1232	5.0	UG/L	ND	8080
				Aroclor 1242	5.0	UG/L	ND	8080
				Aroclor 1248	5.0	UG/L	ND	8080
				Aroclor 1254	5.0	UG/L	ND	8080
				Aroclor 1260	5.0	UG/L	ND	8080

ND - Not Detected

SAMPLE TESTING RESULTS

Contract No: DACA63-92-D-0047 Site No: Gary AFB #10350 Tanks 8-11 San Marcos, TX Zone: 4

Order No: 0008 Sampler: Walter Carlock

PCB (Polychlorinated Biphenyls)

Date Sampled	Lab ID#	Field Description	Matrix	Analyte	MDL	Units	Results	Test Method
2/23/94	34226	GAFB-10-350-09-TC	Water	Aroclor 1016	5.0	UG/L	ND	8080
				Aroclor 1221	5.0	UG/L	ND	8080
				Aroclor 1232	5.0	UG/L	ND	8080
				Aroclor 1242	5.0	UG/L	ND	8080
				Aroclor 1248	5.0	UG/L	ND	8080
				Aroclor 1254	5.0	UG/L	ND	8080
				Aroclor 1260	5.0	UG/L	ND	8080

ND - Not Detected

SAMPLE TESTING RESULTS

Contract No: DACA63-92-D-0047 Site No: Gary AFB #10350 Tanks 8-11 San Marcos, TX Zone: 4

Order No: 0008 Sampler: Walter Carlock

PCB (Polychlorinated Biphenyls)

Date Sampled	Lab ID#	Field Description	Matrix	Analyte	MDL	Units	Results	Test Method
2/23/94	34227	GAFB-10-350-10-TC	Water	Aroclor 1016	5.0	UG/L	ND	8080
				Aroclor 1221	5.0	UG/L	ND	8080
				Aroclor 1232	5.0	UG/L	ND	8080
				Aroclor 1242	5.0	UG/L	ND	8080
				Aroclor 1248	5.0	UG/L	ND	8080
				Aroclor 1254	5.0	UG/L	ND	8080
				Aroclor 1260	5.0	UG/L	ND	8080

ND - Not Detected

SAMPLE TESTING RESULTS

Contract No: DACA63-92-D-0047 Site No: Gary AFB #10350 Tanks 8-11 San Marcos, TX Zone: 4

Order No: 0008 Sampler: Walter Carlock

PCB (Polychlorinated Biphenyls)

Date Sampled	Lab ID#	Field Description	Matrix	Analyte	MDL	Units	Results	Test Method
2/23/94	34225	GAFB-10-350-11-TC	Water	Aroclor 1016	5.0	UG/L	ND	8080
				Aroclor 1221	5.0	UG/L	ND	8080
				Aroclor 1232	5.0	UG/L	ND	8080
				Aroclor 1242	5.0	UG/L	ND	8080
				Aroclor 1248	5.0	UG/L	ND	8080
				Aroclor 1254	5.0	UG/L	ND	8080
				Aroclor 1260	5.0	UG/L	ND	8080

ND - Not Detected

SAMPLE TESTING RESULTS

Contract No.: DACA63-92-D-0047 Delivery Order: 0008 Zone: 4

Site: Gary AFB #10350 Tanks 8-11 San Marcos, TX

Field Description: GAFB-10-350-08-TC Sampler: Walter Carlock

Lab ID# 34224 Matrix: Water Date Sampled: 2/23/94

FULL VOLATILE

Parameter	Results	Quant. Limit	Units	Method
Acetone	<0.010	0.010	mg/l	8260
Acrolein	<0.005	0.005	mg/l	8260
Acrylonitrile	<0.004	0.004	mg/l	8260
Allyl chloride	<0.003	0.003	mg/l	8260
Benzene	<0.003	0.003	mg/l	8260
Bromodichloromethane	<0.003	0.003	mg/l	8260
Bromoform	<0.002	0.002	mg/l	8260
Bromomethane	<0.006	0.006	mg/l	8260
2-Butanone (MEK)	<0.010	0.010	mg/l	8260
Carbon tetrachloride	<0.003	0.003	mg/l	8260
Chlorobenzene	<0.004	0.004	mg/l	8260
Chloroethane	<0.002	0.002	mg/l	8260
2-Chloroethyl vinyl ether	<0.010	0.010	mg/l	8260
Chloroform	<0.003	0.003	mg/l	8260
Chloromethane	<0.005	0.005	mg/l	8260
Dibromochloromethane	<0.003	0.003	mg/l	8260
1,2-Dibromo-3-chloropropane	<0.006	0.006	mg/l	8260
1,2-Dibromoethane	<0.003	0.003	mg/l	8260
Dibromomethane	<0.002	0.002	mg/l	8260
1,2-Dichlorobenzene	<0.005	0.005	mg/l	8260
1,3-Dichlorobenzene	<0.005	0.005	mg/l	8260
1,4-Dichlorobenzene	<0.006	0.006	mg/l	8260
trans-1,4-Dichloro-2-butene	<0.004	0.004	mg/l	8260
Dichlorodifluoromethane	<0.003	0.003	mg/l	8260
1,1-0.005Dichloroethane	<0.003	0.003	mg/l	8260
1,2-Dichloroethane	<0.003	0.003	mg/l	8260
1,1-Dichloroethene	<0.005	0.005	mg/l	8260
cis-1,2-Dichloroethene	<0.004	0.004	mg/l	8260
trans-1,2-Dichloroethene	<0.004	0.004	mg/l	8260
1,2-Dichloropropane	<0.002	0.002	mg/l	8260
cis-1,3-Dichloropropene	<0.002	0.002	mg/l	8260
trans-1,3-Dichlopropene	<0.003	0.003	mg/l	8260

FULL VOLATILE Lab ID# 34224 (continued page 2 of 2)

Parameter	Results	Quant. Limit	Units	Method
Diethyl ether	<0.005	0.005	mg/l	8260
Ethylbenzene	<0.005	0.005	mg/l	8260
Ethylmethacrylate	<0.005	0.005	mg/l	8260
2-Hexanone	<0.006	0.006	mg/l	8260
Iodomethane	<0.005	0.005	mg/l	8260
Methacrylonitrile	<0.005	0.005	mg/l	8260
Methylene chloride	<0.004	0.004	mg/l	8260
Methylmethacrylate	<0.004	0.004	mg/l	8260
4-Methyl-2-pentanone (MIBK)	<0.010	0.010	mg/l	8260
Propionitrile	<0.010	0.010	mg/l	8260
Styrene	<0.004	0.004	mg/l	8260
1,1,1,2-Tetrachloroethane	<0.005	0.005	mg/l	8260
1,1,2,2-Tetrachloroethane	<0.003	0.003	mg/l	8260
Tetrachloroethene	<0.005	0.005	mg/l	8260
Toluene	<0.003	0.003	mg/l	8260
1,1,1-Trichloroethane	<0.005	0.005	mg/l	8260
1,1,2-Trichloroethane	<0.003	0.003	mg/l	8260
Trichloroethene	<0.002	0.002	mg/l	8260
Trichlorofluoromethane	<0.005	0.005	mg/l	8260
1,2,3-Trichloropropane	<0.003	0.003	mg/l	8260
m,p-Xylene	0.010	0.005	mg/l	8260
o-Xylene	0.008	0.004	mg/l	8260
Vinyl Chloride	<0.002	0.002	mg/l	8260

SAMPLE TESTING RESULTS

Contract No.: DACA63-92-D-0047 Delivery Order: 0008 Zone: 4

Site: Gary AFB #10350 Tanks 8-11 San Marcos, TX

Field Description: GAFB-10-350-10-TC Sampler: Walter Carlock

Lab ID# 34227 Matrix: Water Date Sampled: 2/23/94

FULL VOLATILE

Parameter	Results	Quant. Limit	Units	Method
Acetone	<0.010	0.010	mg/l	8260
Acrolein	<0.005	0.005	mg/l	8260
Acrylonitrile	<0.004	0.004	mg/l	8260
Allyl chloride	<0.003	0.003	mg/l	8260
Benzene	<0.003	0.003	mg/l	8260
Bromodichloromethane	<0.003	0.003	mg/l	8260
Bromoform	<0.002	0.002	mg/l	8260
Bromomethane	<0.006	0.006	mg/l	8260
2-Butanone (MEK)	<0.010	0.010	mg/l	8260
Carbon tetrachloride	<0.003	0.003	mg/l	8260
Chlorobenzene	<0.004	0.004	mg/l	8260
Chloroethane	<0.002	0.002	mg/l	8260
2-Chloroethyl vinyl ether	<0.010	0.010	mg/l	8260
Chloroform	<0.003	0.003	mg/l	8260
Chloromethane	<0.005	0.005	mg/l	8260
Dibromochloromethane	<0.003	0.003	mg/l	8260
1,2-Dibromo-3-chloropropane	<0.006	0.006	mg/l	8260
1,2-Dibromoethane	<0.003	0.003	mg/l	8260
Dibromomethane	<0.002	0.002	mg/l	8260
1,2-Dichlorobenzene	<0.005	0.005	mg/l	8260
1,3-Dichlorobenzene	<0.005	0.005	mg/l	8260
1,4-Dichlorobenzene	<0.006	0.006	mg/l	8260
trans-1,4-Dichloro-2-butene	<0.004	0.004	mg/l	8260
Dichlorodifluoromethane	<0.003	0.003	mg/l	8260
1,1-0.005Dichloroethane	<0.003	0.003	mg/l	8260
1,2-Dichloroethane	<0.003	0.003	mg/l	8260
1,1-Dichloroethene	<0.005	0.005	mg/l	8260
cis-1,2-Dichloroethene	<0.004	0.004	mg/l	8260
trans-1,2-Dichloroethene	<0.004	0.004	mg/l	8260
1,2-Dichloropropane	<0.002	0.002	mg/l	8260
cis-1,3-Dichloropropene	<0.002	0.002	mg/l	8260
trans-1,3-Dichlopropene	<0.003	0.003	mg/l	8260

FULL VOLATILE Lab ID# 34227 (continued page 2 of 2)

Parameter	Results	Quant. Limit	Units	Method
Diethyl ether	<0.005	0.005	mg/l	8260
Ethylbenzene	0.010	0.005	mg/l	8260
Ethylmethacrylate	<0.005	0.005	mg/l	8260
2-Hexanone	<0.006	0.006	mg/l	8260
Iodomethane	<0.005	0.005	mg/l	8260
Methacrylonitrile	<0.005	0.005	mg/l	8260
Methylene chloride	<0.004	0.004	mg/l	8260
Methylmethacrylate	<0.004	0.004	mg/l	8260
4-Methyl-2-pentanone (MIBK)	<0.010	0.010	mg/l	8260
Propionitrile	<0.010	0.010	mg/l	8260
Styrene	<0.004	0.004	mg/l	8260
1,1,1,2-Tetrachloroethane	<0.005	0.005	mg/l	8260
1,1,2,2-Tetrachloroethane	<0.003	0.003	mg/l	8260
Tetrachloroethene	<0.005	0.005	mg/l	8260
Toluene	0.011	0.003	mg/l	8260
1,1,1-Trichloroethane	<0.005	0.005	mg/l	8260
1,1,2-Trichloroethane	<0.003	0.003	mg/l	8260
Trichloroethene	<0.002	0.002	mg/l	8260
Trichlorofluoromethane	<0.005	0.005	mg/l	8260
1,2,3-Trichloropropane	<0.003	0.003	mg/l	8260
m,p-Xylene	0.039	0.005	mg/l	8260
o-Xylene	0.026	0.004	mg/l	8260
Vinyl Chloride	<0.002	0.002	mg/l	8260

SAMPLE TESTING RESULTS

Contract No.: DACA63-92-D-0047 Delivery Order: 0008 Zone: 4

Site: Gary AFB #10350 Tanks 8-11 San Marcos, TX

Field Description: GAFB-10-350-11-TC Sampler: Walter Carlock

Lab ID# 34225 Matrix: Water Date Sampled: 2/23/94

FULL VOLATILE

Parameter	Results	Quant. Limit	Units	Method
Acetone	<0.010	0.010	mg/l	8260
Acrolein	<0.005	0.005	mg/l	8260
Acrylonitrile	<0.004	0.004	mg/l	8260
Allyl chloride	<0.003	0.003	mg/l	8260
Benzene	<0.003	0.003	mg/l	8260
Bromodichloromethane	<0.003	0.003	mg/l	8260
Bromoform	<0.002	0.002	mg/l	8260
Bromomethane	<0.006	0.006	mg/l	8260
2-Butanone (MEK)	<0.010	0.010	mg/l	8260
Carbon tetrachloride	<0.003	0.003	mg/l	8260
Chlorobenzene	<0.004	0.004	mg/l	8260
Chloroethane	<0.002	0.002	mg/l	8260
2-Chloroethyl vinyl ether	<0.010	0.010	mg/l	8260
Chloroform	<0.003	0.003	mg/l	8260
Chloromethane	<0.005	0.005	mg/l	8260
Dibromochloromethane	<0.003	0.003	mg/l	8260
1,2-Dibromo-3-chloropropane	<0.006	0.006	mg/l	8260
1,2-Dibromoethane	<0.003	0.003	mg/l	8260
Dibromomethane	<0.002	0.002	mg/l	8260
1,2-Dichlorobenzene	<0.005	0.005	mg/l	8260
1,3-Dichlorobenzene	<0.005	0.005	mg/l	8260
1,4-Dichlorobenzene	<0.006	0.006	mg/l	8260
trans-1,4-Dichloro-2-butene	<0.004	0.004	mg/l	8260
Dichlorodifluoromethane	<0.003	0.003	mg/l	8260
1,1-0.005Dichloroethane	<0.003	0.003	mg/l	8260
1,2-Dichloroethane	<0.003	0.003	mg/l	8260
1,1-Dichloroethene	<0.005	0.005	mg/l	8260
cis-1,2-Dichloroethene	<0.004	0.004	mg/l	8260
trans-1,2-Dichloroethene	<0.004	0.004	mg/l	8260
1,2-Dichloropropane	<0.002	0.002	mg/l	8260
cis-1,3-Dichloropropene	<0.002	0.002	mg/l	8260
trans-1,3-Dichlopropene	<0.003	0.003	mg/l	8260

FULL VOLATILE Lab ID# 34225 (continued page 2 of 2)

Parameter	Results	Quant. Limit	Units	Method
Diethyl ether	<0.005	0.005	mg/l	8260
Ethylbenzene	<0.005	0.005	mg/l	8260
Ethylmethacrylate	<0.005	0.005	mg/l	8260
2-Hexanone	<0.006	0.006	mg/l	8260
Iodomethane	<0.005	0.005	mg/l	8260
Methacrylonitrile	<0.005	0.005	mg/l	8260
Methylene chloride	<0.004	0.004	mg/l	8260
Methylmethacrylate	<0.004	0.004	mg/l	8260
4-Methyl-2-pentanone (MIBK)	<0.010	0.010	mg/l	8260
Propionitrile	<0.010	0.010	mg/l	8260
Styrene	<0.004	0.004	mg/l	8260
1,1,1,2-Tetrachloroethane	<0.005	0.005	mg/l	8260
1,1,2,2-Tetrachloroethane	<0.003	0.003	mg/l	8260
Tetrachloroethene	<0.005	0.005	mg/l	8260
Toluene	<0.003	0.003	mg/l	8260
1,1,1-Trichloroethane	<0.005	0.005	mg/l	8260
1,1,2-Trichloroethane	<0.003	0.003	mg/l	8260
Trichloroethene	<0.002	0.002	mg/l	8260
Trichlorofluoromethane	<0.005	0.005	mg/l	8260
1,2,3-Trichloropropane	<0.003	0.003	mg/l	8260
m,p-Xylene	<0.005	0.005	mg/l	8260
o-Xylene	<0.004	0.004	mg/l	8260
Vinyl Chloride	<0.002	0.002	mg/l	8260

SAMPLE TESTING RESULTS

Contract No.:DACA63-92-D-0047 Delivery Order: 0008 Zone: 4

Site:Gary AFB #10350 Tanks 8-11 San Marcos ,TX

Field Description: GAFB-10-350-09-TC Sampler: Walter Carlock

Lab ID# 34226 Matrix: Water Date Sampled: 2/23/94

FULL VOLATILE

Parameter	Results	Quant. Limit	Units	Method
Acetone	<0.050	0.050	mg/l	8260
Acrolein	<0.025	0.025	mg/l	8260
Acrylonitrile	<0.020	0.020	mg/l	8260
Allyl chloride	<0.015	0.015	mg/l	8260
Benzene	2.8	0.015	mg/l	8260
Bromodichloromethane	<0.015	0.015	mg/l	8260
Bromoform	<0.010	0.010	mg/l	8260
Bromomethane	<0.030	0.030	mg/l	8260
2-Butanone (MEK)	<0.050	0.050	mg/l	8260
Carbon tetrachloride	<0.015	0.015	mg/l	8260
Chlorobenzene	<0.020	0.020	mg/l	8260
Chloroethane	<0.010	0.010	mg/l	8260
2-Chloroethyl vinyl ether	<0.050	0.050	mg/l	8260
Chloroform	<0.015	0.015	mg/l	8260
Chloromethane	<0.025	0.025	mg/l	8260
Dibromochloromethane	<0.015	0.015	mg/l	8260
1,2-Dibromo-3-chloropropane	<0.030	0.030	mg/l	8260
1,2-Dibromoethane	<0.015	0.015	mg/l	8260
Dibromomethane	<0.010	0.010	mg/l	8260
1,2-Dichlorobenzene	<0.025	0.025	mg/l	8260
1,3-Dichlorobenzene	<0.025	0.025	mg/l	8260
1,4-Dichlorobenzene	<0.030	0.030	mg/l	8260
trans-1,4-Dichloro-2-butene	<0.020	0.020	mg/l	8260
Dichlorodifluoromethane	<0.015	0.015	mg/l	8260
1,1-Dichloroethane	<0.015	0.015	mg/l	8260
1,2-Dichloroethane	0.91	0.015	mg/l	8260
1,1-Dichloroethene	<0.025	0.025	mg/l	8260
cis-1,2-Dichloroethene	<0.020	0.020	mg/l	8260
trans-1,2-Dichloroethene	<0.020	0.020	mg/l	8260
1,2-Dichloropropane	<0.010	0.010	mg/l	8260
cis-1,3-Dichloropropene	<0.010	0.010	mg/l	8260
trans-1,3-Dichlopropene	<0.015	0.015	mg/l	8260

FULL VOLATILE Lab ID# 34226 (continued page 2 of 2)

Parameter	Results	Quant. Limit	Units	Method
Diethyl ether	<0.025	0.025	mg/l	8260
Ethylbenzene	1.7	0.025	mg/l	8260
Ethylmethacrylate	<0.025	0.025	mg/l	8260
2-Hexanone	<0.030	0.030	mg/l	8260
Iodomethane	<0.025	0.025	mg/l	8260
Methacrylonitrile	<0.025	0.025	mg/l	8260
Methylene chloride	<0.020	0.020	mg/l	8260
Methylmethacrylate	<0.020	0.020	mg/l	8260
4-Methyl-2-pentanone (MIBK)	<0.050	0.050	mg/l	8260
Propionitrile	<0.050	0.050	mg/l	8260
Styrene	<0.020	0.020	mg/l	8260
1,1,1,2-Tetrachloroethane	<0.025	0.025	mg/l	8260
1,1,2,2-Tetrachloroethane	<0.015	0.015	mg/l	8260
Tetrachloroethene	<0.025	0.025	mg/l	8260
Toluene	9.9	0.015	mg/l	8260
1,1,1-Trichloroethane	<0.025	0.025	mg/l	8260
1,1,2-Trichloroethane	<0.015	0.015	mg/l	8260
Trichloroethene	<0.010	0.010	mg/l	8260
Trichlorofluoromethane	<0.025	0.025	mg/l	8260
1,2,3-Trichloropropane	<0.015	0.015	mg/l	8260
m,p-Xylene	11	0.025	mg/l	8260
o-Xylene	6.3	0.020	mg/l	8260
Vinyl Chloride	<0.010	0.010	mg/l	8260

SAMPLE TESTING RESULTS

Contract No.: DACA63-92-D-0047 Delivery Order: 0008 Zone: 4

Site: Gary AFB #10350 Tanks 8-11 San Marcos, TX

Field Description: GAFB-10-350-08-TC Sampler: Walter Carlock

Lab ID# 34224 Matrix: Water Date Sampled: 2/23/94

SEMI-VOLATILE

Parameter	MDL	Units	Results	Method
Acenaphthene	10	UG/L	ND	8270
Acenaphthylene	10	UG/L	ND	8270
Acetophenone	10	UG/L	ND	8270
Aniline	10	UG/L	ND	8270
Anthracene	10	UG/L	ND	8270
4-Aminobiphenyl	10	UG/L	ND	8270
Benzidine	50	UG/L	ND	8270
Benzo(a)anthracene	10	UG/L	ND	8270
Benzo(b)fluorathene	10	UG/L	ND	8270
Benzo(k)fluoranthene	10	UG/L	ND	8270
Benzo(g,h,i)perylane	10	UG/L	ND	8270
Benzo(a)pyrene	10	UG/L	ND	8270
Benzoic Acid	50	UG/L	ND	8270
Benzyl alcohol	20	UG/L	ND	8270
Bis(2-chloroethoxy)methane	10	UG/L	ND	8270
Bis(2-chloroethyl)ether	10	UG/L	ND	8270
Bis(2-chlorolsopropyl)ether	10	UG/L	ND	8270
Bis(2-ethylhexyl)phthalate	10	UG/L	ND	8270
4-Bromophenylphenyl ether	10	UG/L	ND	8270
Butylbenzyl phthalate	10	UG/L	ND	8270
4-Chloroaniline	20	UG/L	ND	8270
1-Chloronaphthalene	10	UG/L	ND	8270
2-Chloronaphthalene	10	UG/L	ND	8270
4-Chloro-3-methylphenol	20	UG/L	ND	8270
2-Chloropenol	10	UG/L	ND	8270
4-Chlorophenylphenyl ether	10	UG/L	ND	8270
Chrysene	10	UG/L	ND	8270
Dibenz(a,h)anthracene	10	UG/L	ND	8270
Dibenzofuran	10	UG/L	ND	8270
1,3-Dichlorobenzene	10	UG/L	ND	8270
1,4-Dichlorobenzene	10	UG/L	ND	8270

SEMI-VOLATILE Lab ID# 34224 (continued page 2 or 3)

Parameter	MDL	Units	Results	Method
1,2-Dichlorobenzene	10	UG/L	ND	8270
3,3-Dichlorobenzidine	20	UG/L	ND	8270
2,4-Dichlorophenol	10	UG/L	ND	8270
2-6-Dichlorophenol	10	UG/L	ND	8270
Diethylphthalate	10	UG/L	ND	8270
a,a-Dimethylphenethylamine	10	UG/L	ND	8270
2,4-Dimethylphenol	10	UG/L	ND	8270
Dimethylphthalate	10	UG/L	ND	8270
Di-n-butylphthalate	10	UG/L	ND	8270
4,6-Dinitro-2-methylphenol	50	UG/L	ND	8270
2,4-Dinitrophenol	50	UG/L	ND	8270
2,4-Dinitrotoluene	10	UG/L	ND	8270
2,6-Dinitrotoluene	10	UG/L	ND	8270
Di-n-octylphthalate	10	UG/L	ND	8270
1,2-Diphenylhydrazine	50	UG/L	ND	8270
Fluoranthene	10	UG/L	ND	8270
Fluorene	10	UG/L	ND	8270
Hexachlorobenzene	10	UG/L	ND	8270
Hexachlorobutadlene	10	UG/L	ND	8270
Hexachlorocyclopentadlene	10	UG/L	ND	8270
Hexachloroethane	10	UG/L	ND	8270
Indeno(1,2,3-cd)pyrene	10	UG/L	ND	8270
Isophorone	10	UG/L	ND	8270
3-Methylcholanthrene	10	UG/L	ND	8270
2-Methylnaphthalene	10	UG/L	32	8270
2-Methylphenol	10	UG/L	ND	8270
4-Methylphenol*	10	UG/L	ND	8270
Naphthalene	10	UG/L	ND	8270
1-Naphthylamine	10	UG/L	ND	8270
2-Naphthylamine	10	UG/L	ND	8270
2-Nitroaniline	10	UG/L	ND	8270
3-Nitroaniline	10	UG/L	ND	8270
4-Nitroaniline	10	UG/L	ND	8270
Nitrobenzene	10	UG/L	ND	8270
2-Nitrophenol	10	UG/L	ND	8270
4-Nitrophenol	50	UG/L	ND	8270
N-Nitroso-di-n-butylamine	10	UG/L	ND	8270
N-Nitrosodimethylamine	10	UG/L	ND	8270
N-Nitrosodi-n-phenylamine**	10	UG/L	ND	8270
N-Nitroso-di-n-propylamine	10	UG/L	ND	8270

SEMI-VOLATILE Lab ID# 34224 (Continued page 3 of 3)

Parameter	MDL	Units	Results	Method
Pentachlorobenzene	10	UG/L	ND	8270
Pentachloronitrobenzene	10	UG/L	ND	8270
Pentachlorophenol	50	UG/L	ND	8270
Phenacetin	10	UG/L	ND	8270
Phenanthrene	10	UG/L	ND	8270
Phenol	10	UG/L	ND	8270
Pyrene	10	UG/L	ND	8270
Pyridine	10	UG/L	ND	8270
1,2,4,5-Tetrachlorobenzene	10	UG/L	ND	8270
2,3,4,6-Tetrachlorophenol	10	UG/L	ND	8270
1,2,4-Trichlorobenzene	10	UG/L	ND	8270
2,4,5-Trichlorophenol	10	UG/L	ND	8270
2,4,6-Trichlorophenol	10	UG/L	ND	8270

ND - not detected
* - Co-elutes with 3-Methylphenol
** - Inseparable from Diphenylamine

SAMPLE TESTING RESULTS

Contract No.: DACA63-92-D-0047 Delivery Order: 0008 Zone: 4

Site: Gary AFB #10350 Tanks 8-11 San Marcos, TX

Field Description: GAFB-10-350-11-TC Sampler: Walter Carlock

Lab ID# 34225 Matrix: Water Date Sampled: 2/23/94

SEMI-VOLATILE

Parameter	MDL	Units	Results	Method
Acenaphthene	10	UG/L	ND	8270
Acenaphthylene	10	UG/L	ND	8270
Acetophenone	10	UG/L	ND	8270
Aniline	10	UG/L	ND	8270
Anthracene	10	UG/L	ND	8270
4-Aminobiphenyl	10	UG/L	ND	8270
Benzidine	50	UG/L	ND	8270
Benzo(a)anthracene	10	UG/L	ND	8270
Benzo(b)fluorathene	10	UG/L	ND	8270
Benzo(k)fluoranthene	10	UG/L	ND	8270
Benzo(g,h,i)perylane	10	UG/L	ND	8270
Benzo(a)pyrene	10	UG/L	ND	8270
Benzoic Acid	50	UG/L	ND	8270
Benzyl alcohol	20	UG/L	ND	8270
Bis(2-chloroethoxy)methane	10	UG/L	ND	8270
Bis(2-chloroethyl)ether	10	UG/L	ND	8270
Bis(2-chlorolsopropyl)ether	10	UG/L	ND	8270
Bis(2-ethylhexyl)phthalate	10	UG/L	ND	8270
4-Bromophenylphenyl ether	10	UG/L	ND	8270
Butylbenzyl phthalate	10	UG/L	ND	8270
4-Chloroaniline	20	UG/L	ND	8270
1-Chloronaphthalene	10	UG/L	ND	8270
2-Chloronaphthalene	10	UG/L	ND	8270
4-Chloro-3-methylphenol	20	UG/L	ND	8270
2-Chloropenol	10	UG/L	ND	8270
4-Chlorophenylphenyl ether	10	UG/L	ND	8270
Chrysene	10	UG/L	ND	8270
Dibenz(a,h)anthracene	10	UG/L	ND	8270
Dibenzofuran	10	UG/L	ND	8270
1,3-Dichlorobenzene	10	UG/L	ND	8270
1,4-Dichlorobenzene	10	UG/L	ND	8270

SEMI-VOLATILE Lab ID# 34225 (continued page 2 or 3)

Parameter	MDL	Units	Results	Method
1,2-Dichlorobenzene	10	UG/L	ND	8270
3,3-Dichlorobenzidine	20	UG/L	ND	8270
2,4-Dichlorophenol	10	UG/L	ND	8270
2-6-Dichlorophenol	10	UG/L	ND	8270
Diethylphthalate	10	UG/L	ND	8270
a,a-Dimethylphenethylamine	10	UG/L	ND	8270
2,4-Dimethylphenol	10	UG/L	ND	8270
Dimethylphthalate	10	UG/L	ND	8270
Di-n-butylphthalate	10	UG/L	ND	8270
4,6-Dinitro-2-methylphenol	50	UG/L	ND	8270
2,4-Dinitrophenol	50	UG/L	ND	8270
2,4-Dinitrotoluene	10	UG/L	ND	8270
2,6-Dinitrotoluene	10	UG/L	ND	8270
Di-n-octylphthalate	10	UG/L	ND	8270
1,2-Diphenylhydrazine	50	UG/L	ND	8270
Fluoranthene	10	UG/L	ND	8270
Fluorene	10	UG/L	ND	8270
Hexachlorobenzene	10	UG/L	ND	8270
Hexachlorobutadlene	10	UG/L	ND	8270
Hexachlorocyclopentadlene	10	UG/L	ND	8270
Hexachloroethane	10	UG/L	ND	8270
Indeno(1,2,3-cd)pyrene	10	UG/L	ND	8270
Isophorone	10	UG/L	ND	8270
3-Methylcholanthrene	10	UG/L	ND	8270
2-Methylnaphthalene	10	UG/L	ND	8270
2-Methylphenol	10	UG/L	ND	8270
4-Methylphenol*	10	UG/L	ND	8270
Naphthalene	10	UG/L	ND	8270
1-Naphthylamine	10	UG/L	ND	8270
2-Naphthylamine	10	UG/L	ND	8270
2-Nitroaniline	10	UG/L	ND	8270
3-Nitroaniline	10	UG/L	ND	8270
4-Nitroaniline	10	UG/L	ND	8270
Nitrobenzene	10	UG/L	ND	8270
2-Nitrophenol	10	UG/L	ND	8270
4-Nitrophenol	50	UG/L	ND	8270
N-Nitroso-di-n-butylamine	10	UG/L	ND	8270
N-Nitrosodimethylamine	10	UG/L	ND	8270
N-Nitrosodi-n-phenylamine**	10	UG/L	ND	8270
N-Nitroso-di-n-propylamine	10	UG/L	ND	8270

SEMI-VOLATILE Lab ID# 34225 (Continued page 3 of 3)

Parameter	MDL	Units	Results	Method
Pentachlorobenzene	10	UG/L	ND	8270
Pentachloronitrobenzene	10	UG/L	ND	8270
Pentachlorophenol	50	UG/L	ND	8270
Phenacetin	10	UG/L	ND	8270
Phenanthrene	10	UG/L	ND	8270
Phenol	10	UG/L	ND	8270
Pyrene	10	UG/L	ND	8270
Pyridine	10	UG/L	ND	8270
1,2,4,5-Tetrachlorobenzene	10	UG/L	ND	8270
2,3,4,6-Tetrachlorophenol	10	UG/L	ND	8270
1,2,4-Trichlorobenzene	10	UG/L	ND	8270
2,4,5-Trichlorophenol	10	UG/L	ND	8270
2,4,6-Trichlorophenol	10	UG/L	ND	8270

ND - not detected
* - Co-elutes with 3-Methylphenol
** - Inseparable from Diphenylamine

SAMPLE TESTING RESULTS

Contract No.: DACA63-92-D-0047 Delivery Order: 0008 Zone: 4

Site: Gary AFB #10350 Tanks 8-11 San Marcos, TX

Field Description: GAFB-10-350-09-TC Sampler: Walter Carlock

Lab ID# 34226 Matrix: Water Date Sampled: 2/23/94

SEMI-VOLATILE

Parameter	MDL	Units	Results	Method
Acenaphthene	100	UG/L	ND	8270
Acenaphthylene	100	UG/L	ND	8270
Acetophenone	100	UG/L	ND	8270
Aniline	100	UG/L	ND	8270
Anthracene	100	UG/L	ND	8270
4-Aminobiphenyl	100	UG/L	ND	8270
Benzidine	500	UG/L	ND	8270
Benzo(a)anthracene	100	UG/L	ND	8270
Benzo(b)fluorathene	100	UG/L	ND	8270
Benzo(k)fluoranthene	100	UG/L	ND	8270
Benzo(g,h,i)perylane	100	UG/L	ND	8270
Benzo(a)pyrene	100	UG/L	ND	8270
Benzoic Acid	500	UG/L	ND	8270
Benzyl alcohol	200	UG/L	ND	8270
Bis(2-chloroethoxy)methane	100	UG/L	ND	8270
Bis(2-chloroethyl)ether	100	UG/L	ND	8270
Bis(2-chlorolsopropyl)ether	100	UG/L	ND	8270
Bis(2-ethylhexyl)phthalate	100	UG/L	770	8270
4-Bromophenylphenyl ether	100	UG/L	ND	8270
Butylbenzyl phthalate	100	UG/L	ND	8270
4-Chloroaniline	200	UG/L	ND	8270
1-Chloronaphthalene	100	UG/L	ND	8270
2-Chloronaphthalene	100	UG/L	ND	8270
4-Chloro-3-methylphenol	200	UG/L	ND	8270
2-Chloropenol	100	UG/L	ND	8270
4-Chlorophenylphenyl ether	100	UG/L	ND	8270
Chrysene	100	UG/L	ND	8270
Dibenz(a,h)anthracene	100	UG/L	ND	8270
Dibenzofuran	100	UG/L	ND	8270
1,3-Dichlorobenzene	100	UG/L	ND	8270
1,4-Dichlorobenzene	100	UG/L	ND	8270

SEMI-VOLATILE Lab ID# 34226 (continued page 2 or 3)

Parameter	MDL	Units	Results	Method
1,2-Dichlorobenzene	100	UG/L	ND	8270
3,3-Dichlorobenzidine	200	UG/L	ND	8270
2,4-Dichlorophenol	100	UG/L	ND	8270
2-6-Dichlorophenol	100	UG/L	ND	8270
Diethylphthalate	100	UG/L	ND	8270
a,a-Dimethylphenethylamine	100	UG/L	ND	8270
2,4-Dimethylphenol	100	UG/L	470	8270
Dimethylphthalate	100	UG/L	ND	8270
Di-n-butylphthalate	100	UG/L	ND	8270
4,6-Dinitro-2-methylphenol	500	UG/L	ND	8270
2,4-Dinitrophenol	500	UG/L	ND	8270
2,4-Dinitrotoluene	100	UG/L	ND	8270
2,6-Dinitrotoluene	100	UG/L	ND	8270
Di-n-octylphthalate	100	UG/L	ND	8270
1,2-Diphenylhydrazine	500	UG/L	ND	8270
Fluoranthene	100	UG/L	ND	8270
Fluorene	100	UG/L	ND	8270
Hexachlorobenzene	100	UG/L	ND	8270
Hexachlorobutadlene	100	UG/L	ND	8270
Hexachlorocyclopentadlene	100	UG/L	ND	8270
Hexachloroethane	100	UG/L	ND	8270
Indeno(1,2,3-cd)pyrene	100	UG/L	ND	8270
Isophorone	100	UG/L	ND	8270
3-Methylcholanthrene	100	UG/L	ND	8270
2-Methylnaphthalene	100	UG/L	1700	8270
2-Methylphenol	100	UG/L	150	8270
4-Methylphenol*	100	UG/L	110	8270
Naphthalene	100	UG/L	1400	8270
1-Naphthylamine	100	UG/L	ND	8270
2-Naphthylamine	100	UG/L	ND	8270
2-Nitroaniline	100	UG/L	ND	8270
3-Nitroaniline	100	UG/L	ND	8270
4-Nitroaniline	100	UG/L	ND	8270
Nitrobenzene	100	UG/L	ND	8270
2-Nitrophenol	100	UG/L	ND	8270
4-Nitrophenol	500	UG/L	ND	8270
N-Nitroso-di-n-butylamine	100	UG/L	ND	8270
N-Nitrosodimethylamine	100	UG/L	ND	8270
N-Nitrosodi-n-phenylamine**	100	UG/L	ND	8270
N-Nitroso-di-n-propylamine	100	UG/L	ND	8270

SEMI-VOLATILE Lab ID# 34226 (Continued page 3 of 3)

Parameter	MDL	Units	Results	Method
Pentachlorobenzene	100	UG/L	ND	8270
Pentachloronitrobenzene	100	UG/L	ND	8270
Pentachlorophenol	500	UG/L	ND	8270
Phenacetin	100	UG/L	ND	8270
Phenanthrene	100	UG/L	ND	8270
Phenol	100	UG/L	ND	8270
Pyrene	100	UG/L	ND	8270
Pyridine	100	UG/L	ND	8270
1,2,4,5-Tetrachlorobenzene	100	UG/L	ND	8270
2,3,4,6-Tetrachlorophenol	100	UG/L	ND	8270
1,2,4-Trichlorobenzene	100	UG/L	ND	8270
2,4,5-Trichlorophenol	100	UG/L	ND	8270
2,4,6-Trichlorophenol	100	UG/L	ND	8270

ND - not detected
* - Co-elutes with 3-Methylphenol
** - Inseparable from Diphenylamine

SAMPLE TESTING RESULTS

Contract No.: DACA63-92-D-0047 Delivery Order: 0008 Zone: 4

Site: Gary AFB #10350 Tanks 8-11 San Marcos, TX

Field Description: GAFB-10-350-10-TC Sampler: Walter Carlock

Lab ID# 34227 Matrix: Water Date Sampled: 2/23/94

SEMI-VOLATILE

Parameter	MDL	Units	Results	Method
Acenaphthene	100	UG/L	ND	8270
Acenaphthylene	100	UG/L	ND	8270
Acetophenone	100	UG/L	ND	8270
Aniline	100	UG/L	ND	8270
Anthracene	100	UG/L	ND	8270
4-Aminobiphenyl	100	UG/L	ND	8270
Benzidine	500	UG/L	ND	8270
Benzo(a)anthracene	100	UG/L	ND	8270
Benzo(b)fluorathene	100	UG/L	ND	8270
Benzo(k)fluoranthene	100	UG/L	ND	8270
Benzo(g,h,i)perylane	100	UG/L	ND	8270
Benzo(a)pyrene	100	UG/L	ND	8270
Benzoic Acid	500	UG/L	ND	8270
Benzyl alcohol	200	UG/L	ND	8270
Bis(2-chloroethoxy)methane	100	UG/L	ND	8270
Bis(2-chloroethyl)ether	100	UG/L	ND	8270
Bis(2-chloroIsopropyl)ether	100	UG/L	ND	8270
Bis(2-ethylhexyl)phthalate	100	UG/L	1000	8270
4-Bromophenylphenyl ether	100	UG/L	ND	8270
Butylbenzyl phthalate	100	UG/L	ND	8270
4-Chloroaniline	200	UG/L	ND	8270
1-Chloronaphthalene	100	UG/L	ND	8270
2-Chloronaphthalene	100	UG/L	ND	8270
4-Chloro-3-methylphenol	200	UG/L	ND	8270
2-Chloropenol	100	UG/L	ND	8270
4-Chlorophenylphenyl ether	100	UG/L	ND	8270
Chrysene	100	UG/L	ND	8270
Dibenz(a,h)anthracene	100	UG/L	ND	8270
Dibenzofuran	100	UG/L	ND	8270
1,3-Dichlorobenzene	100	UG/L	ND	8270
1,4-Dichlorobenzene	100	UG/L	ND	8270

SEMI-VOLATILE Lab ID# 34227 (continued page 2 or 3)

Parameter	MDL	Units	Results	Method
1,2-Dichlorobenzene	100	UG/L	ND	8270
3,3-Dichlorobenzidine	200	UG/L	ND	8270
2,4-Dichlorophenol	100	UG/L	ND	8270
2-6-Dichlorophenol	100	UG/L	ND	8270
Diethylphthalate	100	UG/L	ND	8270
a,a-Dimethylphenethylamine	100	UG/L	ND	8270
2,4-Dimethylphenol	100	UG/L	ND	8270
Dimethylphthalate	100	UG/L	ND	8270
Di-n-butylphthalate	100	UG/L	ND	8270
4,6-Dinitro-2-methylphenol	500	UG/L	ND	8270
2,4-Dinitrophenol	500	UG/L	ND	8270
2,4-Dinitrotoluene	100	UG/L	ND	8270
2,6-Dinitrotoluene	100	UG/L	ND	8270
Di-n-octylphthalate	100	UG/L	ND	8270
1,2-Diphenylhydrazine	500	UG/L	ND	8270
Fluoranthene	100	UG/L	ND	8270
Fluorene	100	UG/L	ND	8270
Hexachlorobenzene	100	UG/L	ND	8270
Hexachlorobutadlene	100	UG/L	ND	8270
Hexachlorocyclopentadlene	100	UG/L	ND	8270
Hexachloroethane	100	UG/L	ND	8270
Indeno(1,2,3-cd)pyrene	100	UG/L	ND	8270
Isophorone	100	UG/L	ND	8270
3-Methylcholanthrene	100	UG/L	ND	8270
2-Methylnaphthalene	100	UG/L	ND	8270
2-Methylphenol	100	UG/L	ND	8270
4-Methylphenol*	100	UG/L	ND	8270
Naphthalene	100	UG/L	ND	8270
1-Naphthylamine	100	UG/L	ND	8270
2-Naphthylamine	100	UG/L	ND	8270
2-Nitroaniline	100	UG/L	ND	8270
3-Nitroaniline	100	UG/L	ND	8270
4-Nitroaniline	100	UG/L	ND	8270
Nitrobenzene	100	UG/L	ND	8270
2-Nitrophenol	100	UG/L	ND	8270
4-Nitrophenol	500	UG/L	ND	8270
N-Nitroso-di-n-butylamine	100	UG/L	ND	8270
N-Nitrosodimethylamine	100	UG/L	ND	8270
N-Nitrosodi-n-phenylamine**	100	UG/L	ND	8270
N-Nitroso-di-n-propylamine	100	UG/L	ND	8270

SEMI-VOLATILE Lab ID# 34227 (Continued page 3 of 3)

Parameter	MDL	Units	Results	Method
Pentachlorobenzene	100	UG/L	ND	8270
Pentachloronitrobenzene	100	UG/L	ND	8270
Pentachlorophenol	500	UG/L	ND	8270
Phenacetin	100	UG/L	ND	8270
Phenanthrene	100	UG/L	ND	8270
Phenol	100	UG/L	ND	8270
Pyrene	100	UG/L	ND	8270
Pyridine	100	UG/L	ND	8270
1,2,4,5-Tetrachlorobenzene	100	UG/L	ND	8270
2,3,4,6-Tetrachlorophenol	100	UG/L	ND	8270
1,2,4-Trichlorobenzene	100	UG/L	ND	8270
2,4,5-Trichlorophenol	100	UG/L	ND	8270
2,4,6-Trichlorophenol	100	UG/L	ND	8270

ND - not detected
* - Co-elutes with 3-Methylphenol
** - Inseparable from Diphenylamine

Attachment 16
Groundwater Gauging Data

Groundwater Guaging Data for LPST 108133

Well	Date	Time	Total Depth	Depth to Water	Product Thickness	Corrected Depth to Water	Casing Elevation	Corrected Water Elevation
B1/MW1	5/15/96	14:10	36.5	27.7	0	27.7	573.06	545.36
B1/MW1	5/16/96	10:00	36.5	27.73	0	27.73	573.06	545.33
B1/MW1	5/16/96	13:59	36.5	27.74	0	27.74	573.06	545.32
B1/MW1	5/30/96	10:18	36.5	27.85	0	27.85	573.06	545.21

Attachment 17
Analytical Report Data

Analytical Report Data - Risk-Based Site Assessment*

*Compiled from data gathered by Thompson Professional Group, Inc., from samples collected May 16, 1996, through July 17, 1996.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

JUN 1 3

Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number: 96-05-952

Approved for Release by:

Brent Barron, Client Services Supervisor

Date: 6/10/96

Greg Grandits
Laboratory Director

Idelis Williams
Quality Assurance Officer

The attached analytical data package may not be reproduced except in full without the express written approval of this laboratory.

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Appendix II - Laboratory Results

INTRODUCTION

SPL is pleased to present the following report to Thompson Engineering for the Corps of Engineer project LPST # 108133 for former Perrin Air Force Base received on May 17, 1996. The scope of work included seven (7) SOIL samples for BTEX, Total Petroleum Hydrocarbons (TPH) by Soxhlet and LCPAHS. All samples were received at a temperature of 5 degrees C.

GENERAL

The methods employed for this project are listed in the laboratory method section.

LABORATORY METHODS

The methods that were employed in this project were BTEX by SW846 method 5030/8020, TPH by Soxhlet/IR by method 3540/418.1 and Polynuclear Aromatics Hydrocarbons (LCPAHS) by SW846 method 3550/8310.

DISCUSSION AND RECOMMENDATIONS

The results for the samples chosen for the matrix spike (MS), matrix spike dupliate (MSD) recoveries as well as the relative percent difference (RPD) between the matrix spike and the matrix spike duplicate for this project were acceptable except for the MS, MSD for the following compounds: Napthalene, Acenaphthylene, Acenaphthene and Fluorene as well as the RPD for Phenanthrene, Fluoranthene, Pyrene, Chrysene, Benzo (A) Anthracene and Benzo (B) Fluoranthene. The laboratory control sample (LCS) was well within the quality control (QC) limit criteria.

All of the detection limits and results have been based on the weight of the samples.

APPENDIX I

SUMMARY TABLE OF RESULTS for BTEX

SAMPLE ID	DATE SAMPLED	SPL ID	MATRIX	COMPOUND	RESULTS
B-7-7622	05/16/96	9605952-01	SOIL	Benzene Toluene Ethylbenze Total Xylene Total Btex	< 10 µg/Kg 24 µg/Kg 190 µg/Kg 230 µg/Kg 444 µg/Kg
B7-7630	05/16/96	9605952-02	SOIL	Benzene Toluene Ethylbenzene Total Xylene Total Btex	< 1 µg/Kg < 1 µg/Kg < 1 µg/Kg < 1 µg/Kg < 1 µg/Kg
B7-7617	05/16/96	9605952-03	SOIL	Benzene Toluene Ethylbenzene Total Xylene Total Btex	< 1 µg/Kg < 1 µg/Kg 3 µg/Kg 8 µg/Kg 11 µg/Kg
B8-8730	05/16/96	9605952-04	SOIL	Benzene Toluene Ethylbenzene Total Xylene Total Btex	< 1 µg/Kg 32 µg/Kg 2 µg/Kg 3 µg/Kg 37 µg/Kg
B8-8717	05/16/96	9605952-05	SOIL	Benzene Toluene Ethylbenzene Total Xylene Total Btex	< 10 µg/Kg < 10 µg/Kg < 10 µg/Kg < 10 µg/Kg < 10 µg/Kg
B8-8720	05/16/96	9605952-06	SOIL	Benzene Toluene Ethylbenzene Total Xylene Total Btex	< 200 µg/Kg 790 µg/Kg 44000 µg/Kg 25000 µg/Kg 69790 µg/Kg
B8-8705	05/17/96	9605952-07	SOIL	Benzene Toluene Ethylbenzene Total Xylene Total Btex	< 5 µg/Kg < 5 µg/Kg < 5 µg/Kg < 5 µg/Kg < 5 µg/Kg

SUMMARY TABLE OF RESULTS for POLYNUCLEAR AROMATICHYDROCARBONS

SAMPLE ID	DATE SAMPLED	SPL ID	MATRIX	COMPOUND	RESULTS
B7-7622	05/16/96	9605952-01	SOIL	Naphthalene	< 3 µg/Kg
				Acenaphthylene	< 1.5 µg/Kg
				Acenaphthene	< 5 µg/Kg
				Fluorene	< 5.6 µg/Kg
				Phenanthrene	< 5.2 µg/Kg
				Anthracene	< 4.5 µg/Kg
				Fluoranthene	< 3.8 µg/Kg
				Pyrene	< 3.5 µg/Kg
				Chrysene	< 2.7 µg/Kg
				Benzo a anthracene	< 2.7 µg/Kg
				Benzo b fluoranthene	< 2.2 µg/Kg
				Benzo k fluoranthene	< 2.4 µg/Kg
				Benzo a pyrene	< 1.1 µg/Kg
				Dibenzo a,h, anthracene	< 2.4 µg/Kg
				Benzo g,h,i perylene	10 µg/Kg
				Indeno 1,2,3-cd pyrene	< 2.6 µg/Kg
B7-7630	05/16/96	9605952-02	SOIL	Naphthalene	< 3 µg/Kg
				Acenaphthylene	< 1.5 µg/Kg
				Acenaphthene	< 5 µg/Kg
				Fluorene	< 5.6 µg/Kg
				Phenanthrene	< 5.2 µg/Kg
				Anthracene	< 4.5 µg/Kg
				Fluoranthene	< 3.8 µg/Kg
				Pyrene	< 3.5 µg/Kg
				Chrysene	< 2.7 µg/Kg
				Benzo a anthracene	< 2.7 µg/Kg
				Benzo b fluoranthene	< 2.2 µg/Kg
				Benzo k fluoranthene	< 2.4 µg/Kg
				Benzo a pyrene	< 1.1 µg/Kg
				Dibenzo a,h, anthracene	< 2.4 µg/Kg
				Benzo g,h,i perylene	< 3.5 µg/Kg
				Indeno 1,2,3-cd pyrene	< 2.6 µg/Kg

B7-7617	05/16/96	9605952-03	SOIL	Naphthalene	< 3 µg/Kg
				Acenaphthylene	< 1.5 µg/Kg
				Acenaphthene	< 5 µg/Kg
				Fluorene	< 5.6 µg/Kg
				Phenanthrene	< 5.2 µg/Kg
				Anthracene	< 4.5 µg/Kg
				Fluoranthene	< 3.8 µg/Kg
				Pyrene	< 3.5 µg/Kg
				Chrysene	< 2.7 µg/Kg
				Benzo a anthracene	< 2.7 µg/Kg
				Benzo b fluoranthene	< 2.2 µg/Kg
				Benzo k fluoranthene	< 2.4 µg/Kg
				Benzo a pyrene	< 1.1 µg/Kg
				Dibenzo a,h, anthracene	< 2.4 µg/Kg
				Benzo g,h,i perylene	< 3.5 µg/Kg
				Indeno 1,2,3-cd pyrene	< 2.6 µg/Kg
B8-8730	05/16/96	9605952-04	SOIL	Naphthalene	< 15 µg/Kg
				Acenaphthylene	< 7.5 µg/Kg
				Acenaphthene	< 25 µg/Kg
				Fluorene	< 28.0 µg/Kg
				Phenanthrene	< 26.0 µg/Kg
				Anthracene	< 22.5 µg/Kg
				Fluoranthene	27 µg/Kg
				Pyrene	24 µg/Kg
				Chrysene	< 13.5 µg/Kg
				Benzo a anthracene	< 13.5 µg/Kg
				Benzo b fluoranthene	< 11.0 µg/Kg
				Benzo k fluoranthene	< 12.0 µg/Kg
				Benzo a pyrene	< 5.5 µg/Kg
				Dibenzo a,h, anthracene	< 12.0 µg/Kg
				Benzo g,h,i perylene	< 17.5 µg/Kg
				Indeno 1,2,3-cd pyrene	< 13.0 µg/Kg

B8-8717	05/16/96	9605952-05	SOIL	Naphthalene	< 30 µg/Kg
				Acenaphthylene	< 15.0 µg/Kg
				Acenaphthene	< 50 µg/Kg
				Fluorene	< 56.0 µg/Kg
				Phenanthrene	< 52.0 µg/Kg
				Anthracene	< 45.0 µg/Kg
				Fluoranthene	< 38.0 µg/Kg
				Pyrene	< 35.0 µg/Kg
				Chrysene	< 27.0 µg/Kg
				Benzo a anthracene	< 27.0 µg/Kg
				Benzo b fluoranthene	< 22.0 µg/Kg
				Benzo k fluoranthene	< 24.0 µg/Kg
				Benzo a pyrene	< 11.0 µg/Kg
				Dibenzo a,h, anthracene	< 24.0 µg/Kg
				Benzo g,h,i perylene	< 35.0 µg/Kg
				Indeno 1,2,3-cd pyrene	< 26.0 µg/Kg
B8-8720	05/16/96	9605952-06	SOIL	Naphthalene	6200 µg/Kg
				Acenaphthylene	< 750.0 µg/Kg
				Acenaphthene	< 2500 µg/Kg
				Fluorene	< 2800.0 µg/Kg
				Phenanthrene	< 2600.0 µg/Kg
				Anthracene	< 2250.0 µg/Kg
				Fluoranthene	< 1900.0 µg/Kg
				Pyrene	< 1750.0 µg/Kg
				Chrysene	< 1350.0 µg/Kg
				Benzo a anthracene	< 1350.0 µg/Kg
				Benzo b fluoranthene	< 1100.0 µg/Kg
				Benzo k fluoranthene	< 1200.0 µg/Kg
				Benzo a pyrene	< 550.0 µg/Kg
				Dibenzo a,h, anthracene	< 1200.0 µg/Kg
				Benzo g,h,i perylene	< 1750.0 µg/Kg
				Indeno 1,2,3-cd pyrene	< 1300.0 µg/Kg

B8-8705	05/17/96	9605952-07	SOIL	Naphthalene	< 3000 μg/Kg
				Acenaphthylene	< 1500.0 μg/Kg
				Acenaphthene	< 5000 μg/Kg
				Fluorene	< 5600.0 μg/Kg
				Phenanthrene	< 5200.0 μg/Kg
				Anthracene	< 4500.0 μg/Kg
				Fluoranthene	< 3800.0 μg/Kg
				Pyrene	3600 μg/Kg
				Chrysene	< 2700.0 μg/Kg
				Benzo a anthracene	< 2700.0 μg/Kg
				Benzo b fluoranthene	5900 μg/Kg
				Benzo k fluoranthene	3100 μg/Kg
				Benzo a pyrene	< 1100.0 μg/Kg
				Dibenzo a,h, anthracene	< 2400.0 μg/Kg
				Benzo g,h,i perylene	3500 μg/Kg
				Indeno 1,2,3-cd pyrene	< 2600.0 μg/Kg

SUMMARY TABLE OF RESULTS for TPH BY SOXHLET

SAMPLE ID	DATE SAMPLED	SPL ID	MATRIX	COMPOUND	RESULTS
B7-7622	05/16/96	9605952-01	SOIL	TPH by Soxhlet	330 mg/Kg
B7-7630	05/16/96	9605952-02	SOIL	TPH by Soxhlet	< 10 mg/Kg
B7-7617	05/16/96	9605952-03	SOIL	TPH by Soxhlet	< 10 mg/Kg
B7-8730	05/16/96	9605952-04	SOIL	TPH by Soxhlet	< 10 mg/Kg
B7-8717	05/16/96	9605952-05	SOIL	TPH by Soxhlet	130 mg/Kg
B7-8720	05/16/96	9605952-06	SOIL	TPH by Soxhlet	1800 mg/Kg
B8-8705	05/17/96	9605952-07	SOIL	TPH by Soxhlet	46 mg/Kg

SUMMARY TABLE OF RESULTS for SOLIDS

SAMPLE ID	DATE SAMPLED	SPL ID	MATRIX	COMPOUND	RESULTS
B7-7622	05/16/96	9605952-01	SOIL	Solids	87 % Wt
B7-7630	05/16/96	9605952-02	SOIL	Solids	78 % Wt
B7-7617	05/16/96	9605952-03	SOIL	Solids	81 % Wt
B8-8730	05/16/96	9605952-04	SOIL	Solids	80 % Wt
B8-8717	05/16/96	9605952-05	SOIL	Solids	95 % Wt
B8-8720	05/16/96	9605952-06	SOIL	Solids	89 % Wt
B8-8705	05/17/96	9605952-07	SOIL	Solids	94 % Wt

APPENDIX II

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9605952-01

Thompson Professional Grp,Inc
6110 Clarkson Lane
Houston, TX 77055
ATTN: John Laser

DATE: 06/07/96

PROJECT: Soil Bor/Grnd Water Mon B7,B8
SITE: Former Gary Air Force Base
SAMPLED BY: H.Platt Thompson Engineering
SAMPLE ID: B7-7622

PROJECT NO: LPST #108133
MATRIX: SOIL
DATE SAMPLED: 05/16/96 14:33:00
DATE RECEIVED: 05/17/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	< 10	10 P	µg/Kg
TOLUENE	24	10 P	µg/Kg
ETHYLBENZENE	190	10 P	µg/Kg
TOTAL XYLENE	230	10 P	µg/Kg
TOTAL BTEX	444		µg/Kg
Surrogate	**% Recovery**		
1,4-Difluorobenzene	88		
4-Bromofluorobenzene	130		
METHOD 5030/8020 ***			
Analyzed by: DY			
Date: 05/30/96			
TPH by Soxhlet/IR	330	10	mg/Kg
METHOD 3540/418.1			
Analyzed by: DR			
Date: 05/28/96 09:00:00			
Sonication extraction	05/29/96		
METHOD 3550 ***			
Analyzed by: MF			
Date: 05/29/96 14:00:00			
Solids	87	1	% Weight
CLP Inorganics SOW			
Analyzed by: ST			
Date: 05/20/96			

(P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9605952-01

Thompson Professional Grp,Inc
6110 Clarkson Lane
Houston, TX 77055
ATTN: John Laser

06/07/96

PROJECT: Soil Bor/Grnd Water Mon B7,B8
SITE: Former Gary Air Force Base
SAMPLED BY: H.Platt Thompson Engineering
SAMPLE ID: B7-7622

PROJECT NO: LPST #108133
MATRIX: SOIL
DATE SAMPLED: 05/16/96 14:33:00
DATE RECEIVED: 05/17/96

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Naphthalene	< 3	3	µg/Kg
Acenaphthylene	< 1.5	1.5	µg/Kg
Acenaphthene	< 5	5	µg/Kg
Fluorene	< 5.6	5.6	µg/Kg
Phenanthrene	< 5.2	5.2	µg/Kg
Anthracene	< 4.5	4.5	µg/Kg
Fluoranthene	< 3.8	3.8	µg/Kg
Pyrene	< 3.5	3.5	µg/Kg
Chrysene	< 2.7	2.7	µg/Kg
Benzo (a) anthracene	< 2.7	2.7	µg/Kg
Benzo (b) fluoranthene	< 2.2	2.2	µg/Kg
Benzo (k) fluoranthene	< 2.4	2.4	µg/Kg
Benzo (a) pyrene	< 1.1	1.1	µg/Kg
Dibenzo (a,h) anthracene	< 2.4	2.4	µg/Kg
Benzo (g,h,i) perylene	10	3.5	µg/Kg
Indeno (1,2,3-cd) pyrene	< 2.6	2.6	µg/Kg

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Biphenyl	µg/Kg	55	50	150
Coronene	µg/Kg	117	50	150

ANALYZED BY: JZL DATE/TIME: 05/31/96 04:10:35
EXTRACTED BY: MF DATE/TIME: 05/29/96 14:00:00
METHOD: 8310 Polynuclear Aromatic Hydrocarbons
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9605952-02

Thompson Professional Grp,Inc
6110 Clarkson Lane
Houston, TX 77055
ATTN: John Laser

DATE: 06/07/96

PROJECT: Soil Bor/Grnd Water Mon B7,B8
SITE: Former Gary Air Force Base
SAMPLED BY: H.Platt Thompson Engineering
SAMPLE ID: B7-7630

PROJECT NO: LPST #108133
MATRIX: SOIL
DATE SAMPLED: 05/16/96 14:47:00
DATE RECEIVED: 05/17/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	< 1	1 P	µg/Kg
TOLUENE	< 1	1 P	µg/Kg
ETHYLBENZENE	< 1	1 P	µg/Kg
TOTAL XYLENE	< 1	1 P	µg/Kg
TOTAL BTEX	< 1		µg/Kg
Surrogate	**% Recovery**		
1,4-Difluorobenzene	89		
4-Bromofluorobenzene	94		
METHOD 5030/8020 ***			
Analyzed by: DY			
Date: 05/30/96			
TPH by Soxhlet/IR	< 10	10	mg/Kg
METHOD 3540/418.1			
Analyzed by: DR			
Date: 05/28/96 09:00:00			
Sonication extraction	05/29/96		
METHOD 3550 ***			
Analyzed by: MF			
Date: 05/29/96 14:00:00			
Solids	78	1	% Weight
CLP Inorganics SOW			
Analyzed by: ST			
Date: 05/20/96			

(P) - Practical Quantitation Limit ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9605952-02

Thompson Professional Grp,Inc
6110 Clarkson Lane
Houston, TX 77055
ATTN: John Laser

06/07/96

PROJECT: Soil Bor/Grnd Water Mon B7,B8
SITE: Former Gary Air Force Base
SAMPLED BY: H.Platt Thompson Engineering
SAMPLE ID: B7-7630

PROJECT NO: LPST #108133
MATRIX: SOIL
DATE SAMPLED: 05/16/96 14:47:00
DATE RECEIVED: 05/17/96

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Naphthalene	< 3	3	µg/Kg
Acenaphthylene	< 1.5	1.5	µg/Kg
Acenaphthene	< 5	5	µg/Kg
Fluorene	< 5.6	5.6	µg/Kg
Phenanthrene	< 5.2	5.2	µg/Kg
Anthracene	< 4.5	4.5	µg/Kg
Fluoranthene	< 3.8	3.8	µg/Kg
Pyrene	< 3.5	3.5	µg/Kg
Chrysene	< 2.7	2.7	µg/Kg
Benzo (a) anthracene	< 2.7	2.7	µg/Kg
Benzo (b) fluoranthene	< 2.2	2.2	µg/Kg
Benzo (k) fluoranthene	< 2.4	2.4	µg/Kg
Benzo (a) pyrene	< 1.1	1.1	µg/Kg
Dibenzo (a,h) anthracene	< 2.4	2.4	µg/Kg
Benzo (g,h,i) perylene	< 3.5	3.5	µg/Kg
Indeno (1,2,3-cd) pyrene	< 2.6	2.6	µg/Kg

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Biphenyl	µg/Kg	104	50	150
Coronene	µg/Kg	102	50	150

ANALYZED BY: JZL
DATE/TIME: 05/30/96 17:28:56
EXTRACTED BY: MF
DATE/TIME: 05/29/96 14:00:00
METHOD: 8310 Polynuclear Aromatic Hydrocarbons
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9605952-03

Thompson Professional Grp,Inc
6110 Clarkson Lane
Houston, TX 77055
ATTN: John Laser

DATE: 06/07/96

PROJECT: Soil Bor/Grnd Water Mon B7,B8
SITE: Former Gary Air Force Base
SAMPLED BY: H.Platt Thompson Engineering
SAMPLE ID: B7-7617

PROJECT NO: LPST #108133
MATRIX: SOIL
DATE SAMPLED: 05/16/96 17:08:00
DATE RECEIVED: 05/17/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	< 1	1 P	µg/Kg
TOLUENE	< 1	1 P	µg/Kg
ETHYLBENZENE	3	1 P	µg/Kg
TOTAL XYLENE	8	1 P	µg/Kg
TOTAL BTEX	11		µg/Kg
Surrogate	**% Recovery**		
1,4-Difluorobenzene	88		
4-Bromofluorobenzene	123		
METHOD 5030/8020 ***			
Analyzed by: DY			
Date: 05/30/96			
TPH by Soxhlet/IR	< 10	10	mg/Kg
METHOD 3540/418.1			
Analyzed by: DR			
Date: 05/28/96 09:00:00			
Sonication extraction	05/29/96		
METHOD 3550 ***			
Analyzed by: MF			
Date: 05/29/96 14:00:00			
Solids	81	1	% Weight
CLP Inorganics SOW			
Analyzed by: ST			
Date: 05/20/96			

(P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9605952-03

Thompson Professional Grp,Inc
6110 Clarkson Lane
Houston, TX 77055
ATTN: John Laser

06/07/96

PROJECT: Soil Bor/Grnd Water Mon B7,B8
SITE: Former Gary Air Force Base
SAMPLED BY: H.Platt Thompson Engineering
SAMPLE ID: B7-7617

PROJECT NO: LPST #108133
MATRIX: SOIL
DATE SAMPLED: 05/16/96 17:08:00
DATE RECEIVED: 05/17/96

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Naphthalene	< 3	3	µg/Kg
Acenaphthylene	< 1.5	1.5	µg/Kg
Acenaphthene	< 5	5	µg/Kg
Fluorene	< 5.6	5.6	µg/Kg
Phenanthrene	< 5.2	5.2	µg/Kg
Anthracene	< 4.5	4.5	µg/Kg
Fluoranthene	< 3.8	3.8	µg/Kg
Pyrene	< 3.5	3.5	µg/Kg
Chrysene	< 2.7	2.7	µg/Kg
Benzo (a) anthracene	< 2.7	2.7	µg/Kg
Benzo (b) fluoranthene	< 2.2	2.2	µg/Kg
Benzo (k) fluoranthene	< 2.4	2.4	µg/Kg
Benzo (a) pyrene	< 1.1	1.1	µg/Kg
Dibenzo (a,h) anthracene	< 2.4	2.4	µg/Kg
Benzo (g,h,i) perylene	< 3.5	3.5	µg/Kg
Indeno (1,2,3-cd) pyrene	< 2.6	2.6	µg/Kg

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Biphenyl	µg/Kg	87	50	150
Coronene	µg/Kg	98	50	150

ANALYZED BY: JZL DATE/TIME: 05/30/96 18:19:56
EXTRACTED BY: MF DATE/TIME: 05/29/96 14:00:00
METHOD: 8310 Polynuclear Aromatic Hydrocarbons
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9605952-04

Thompson Professional Grp,Inc
6110 Clarkson Lane
Houston, TX 77055
ATTN: John Laser

DATE: 06/07/96

PROJECT: Soil Bor/Grnd Water Mon B7,B8
SITE: Former Gary Air Force Base
SAMPLED BY: H.Platt Thompson Engineering
SAMPLE ID: B8-8730

PROJECT NO: LPST #108133
MATRIX: SOIL
DATE SAMPLED: 05/16/96 16:47:00
DATE RECEIVED: 05/17/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	< 1	1 P	µg/Kg
TOLUENE	32	1 P	µg/Kg
ETHYLBENZENE	2	1 P	µg/Kg
TOTAL XYLENE	3	1 P	µg/Kg
TOTAL BTEX	37		µg/Kg
Surrogate	**% Recovery**		
1,4-Difluorobenzene	90		
4-Bromofluorobenzene	120		
METHOD 5030/8020 ***			
Analyzed by: DY			
Date: 05/30/96			
TPH by Soxhlet/IR	< 10	10	mg/Kg
METHOD 3540/418.1			
Analyzed by: DR			
Date: 05/28/96 09:00:00			
Sonication extraction	05/29/96		
METHOD 3550 ***			
Analyzed by: MF			
Date: 05/29/96 14:00:00			
Solids	80	1	% Weight
CLP Inorganics SOW			
Analyzed by: ST			
Date: 05/20/96			

(P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9605952-04

Thompson Professional Grp,Inc
6110 Clarkson Lane
Houston, TX 77055
ATTN: John Laser

06/07/96

PROJECT: Soil Bor/Grnd Water Mon B7,B8
SITE: Former Gary Air Force Base
SAMPLED BY: H.Platt Thompson Engineering
SAMPLE ID: B8-8730

PROJECT NO: LPST #108133
MATRIX: SOIL
DATE SAMPLED: 05/16/96 16:47:00
DATE RECEIVED: 05/17/96

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Naphthalene	< 15	15	µg/Kg
Acenaphthylene	< 7.5	7.5	µg/Kg
Acenaphthene	< 25	25	µg/Kg
Fluorene	< 28.0	28.0	µg/Kg
Phenanthrene	< 26.0	26.0	µg/Kg
Anthracene	< 22.5	22.5	µg/Kg
Fluoranthene	27	19.0	µg/Kg
Pyrene	24	17.5	µg/Kg
Chrysene	< 13.5	13.5	µg/Kg
Benzo (a) anthracene	< 13.5	13.5	µg/Kg
Benzo (b) fluoranthene	< 11.0	11.0	µg/Kg
Benzo (k) fluoranthene	< 12.0	12.0	µg/Kg
Benzo (a) pyrene	< 5.5	5.5	µg/Kg
Dibenzo (a,h) anthracene	< 12.0	12.0	µg/Kg
Benzo (g,h,i) perylene	< 17.5	17.5	µg/Kg
Indeno (1,2,3-cd) pyrene	< 13.0	13.0	µg/Kg

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Biphenyl	µg/Kg	117	50	150
Coronene	µg/Kg	125	50	150

ANALYZED BY: JZL
DATE/TIME: 05/30/96 19:40:35
EXTRACTED BY: MF
DATE/TIME: 05/29/96 14:00:00
METHOD: 8310 Polynuclear Aromatic Hydrocarbons
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9605952-05

Thompson Professional Grp,Inc
6110 Clarkson Lane
Houston, TX 77055
ATTN: John Laser

DATE: 06/07/96

PROJECT: Soil Bor/Grnd Water Mon B7,B8
SITE: Former Gary Air Force Base
SAMPLED BY: H.Platt Thompson Engineering
SAMPLE ID: B8-8717

PROJECT NO: LPST #108133
MATRIX: SOIL
DATE SAMPLED: 05/16/96 17:50:00
DATE RECEIVED: 05/17/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	< 10	10 P	µg/Kg
TOLUENE	< 10	10 P	µg/Kg
ETHYLBENZENE	< 10	10 P	µg/Kg
TOTAL XYLENE	< 10	10 P	µg/Kg
TOTAL BTEX	< 10		µg/Kg
Surrogate	**% Recovery**		
1,4-Difluorobenzene	94		
4-Bromofluorobenzene	99		
METHOD 5030/8020 ***			
Analyzed by: DY			
Date: 05/30/96			
TPH by Soxhlet/IR	130	10	mg/Kg
METHOD 3540/418.1			
Analyzed by: DR			
Date: 05/28/96 09:00:00			
Sonication extraction	05/29/96		
METHOD 3550 ***			
Analyzed by: MF			
Date: 05/29/96 14:00:00			
Solids	95	1	% Weight
CLP Inorganics SOW			
Analyzed by: ST			
Date: 05/20/96			

(P) - Practical Quantitation Limit ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9605952-05

Thompson Professional Grp,Inc
6110 Clarkson Lane
Houston, TX 77055
ATTN: John Laser

06/07/96

PROJECT: Soil Bor/Grnd Water Mon B7,B8
SITE: Former Gary Air Force Base
SAMPLED BY: H.Platt Thompson Engineering
SAMPLE ID: B8-8717

PROJECT NO: LPST #108133
MATRIX: SOIL
DATE SAMPLED: 05/16/96 17:50:00
DATE RECEIVED: 05/17/96

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Naphthalene	< 30	30	µg/Kg
Acenaphthylene	< 15.0	15.0	µg/Kg
Acenaphthene	< 50	50	µg/Kg
Fluorene	< 56.0	56.0	µg/Kg
Phenanthrene	< 52.0	52.0	µg/Kg
Anthracene	< 45.0	45.0	µg/Kg
Fluoranthene	< 38.0	38.0	µg/Kg
Pyrene	< 35.0	35.0	µg/Kg
Chrysene	< 27.0	27.0	µg/Kg
Benzo (a) anthracene	< 27.0	27.0	µg/Kg
Benzo (b) fluoranthene	< 22.0	22.0	µg/Kg
Benzo (k) fluoranthene	< 24.0	24.0	µg/Kg
Benzo (a) pyrene	< 11.0	11.0	µg/Kg
Dibenzo (a,h) anthracene	< 24.0	24.0	µg/Kg
Benzo (g,h,i) perylene	< 35.0	35.0	µg/Kg
Indeno (1,2,3-cd) pyrene	< 26.0	26.0	µg/Kg

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Biphenyl	µg/Kg	CI	50	150
Coronene	µg/Kg	85	50	150

ANALYZED BY: JZL
DATE/TIME: 05/31/96 21:57:13
EXTRACTED BY: MF
DATE/TIME: 05/29/96 14:00:00
METHOD: 8310 Polynuclear Aromatic Hydrocarbons
NOTES: * - Practical Quantitation Limit
ND - Not Detected
NA - Not Analyzed
CI - Coeluting Interference.

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9605952-06

Thompson Professional Grp,Inc
6110 Clarkson Lane
Houston, TX 77055
ATTN: John Laser

DATE: 06/07/96

PROJECT: Soil Bor/Grnd Water Mon B7,B8
SITE: Former Gary Air Force Base
SAMPLED BY: H.Platt Thompson Engineering
SAMPLE ID: B8-8720

PROJECT NO: LPST #108133
MATRIX: SOIL
DATE SAMPLED: 05/16/96 16:30:00
DATE RECEIVED: 05/17/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	< 200	200 P	µg/Kg
TOLUENE	790	200 P	µg/Kg
ETHYLBENZENE	44000	200 P	µg/Kg
TOTAL XYLENE	25000	200 P	µg/Kg
TOTAL BTEX	69790		µg/Kg
Surrogate	**% Recovery**		
1,4-Difluorobenzene	89		
4-Bromofluorobenzene	191 «		
METHOD 5030/8020 ***			
Analyzed by: DY			
Date: 05/30/96			
TPH by Soxhlet/IR	1800	50	mg/Kg
METHOD 3540/418.1			
Analyzed by: DR			
Date: 05/28/96 09:00:00			
Sonication extraction	05/29/96		
METHOD 3550 ***			
Analyzed by: MF			
Date: 05/29/96 14:00:00			
Solids	89	1	% Weight
CLP Inorganics SOW			
Analyzed by: ST			
Date: 05/20/96			

(P) - Practical Quantitation Limit « - Recovery beyond control limits.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9605952-06

Thompson Professional Grp,Inc
6110 Clarkson Lane
Houston, TX 77055
ATTN: John Laser

06/07/96

PROJECT: Soil Bor/Grnd Water Mon B7,B8
SITE: Former Gary Air Force Base
SAMPLED BY: H.Platt Thompson Engineering
SAMPLE ID: B8-8720

PROJECT NO: LPST #108133
MATRIX: SOIL
DATE SAMPLED: 05/16/96 16:30:00
DATE RECEIVED: 05/17/96

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Naphthalene	6200	1500	µg/Kg
Acenaphthylene	< 750.0	750.0	µg/Kg
Acenaphthene	< 2500	2500	µg/Kg
Fluorene	< 2800.0	2800.0	µg/Kg
Phenanthrene	< 2600.0	2600.0	µg/Kg
Anthracene	< 2250.0	2250.0	µg/Kg
Fluoranthene	< 1900.0	1900.0	µg/Kg
Pyrene	< 1750.0	1750.0	µg/Kg
Chrysene	< 1350.0	1350.0	µg/Kg
Benzo (a) anthracene	< 1350.0	1350.0	µg/Kg
Benzo (b) fluoranthene	< 1100.0	1100.0	µg/Kg
Benzo (k) fluoranthene	< 1200.0	1200.0	µg/Kg
Benzo (a) pyrene	< 550.0	550.0	µg/Kg
Dibenzo (a,h) anthracene	< 1200.0	1200.0	µg/Kg
Benzo (g,h,i) perylene	< 1750.0	1750.0	µg/Kg
Indeno (1,2,3-cd) pyrene	< 1300.0	1300.0	µg/Kg

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Biphenyl	µg/Kg	D	50	150
Coronene	µg/Kg	D	50	150

ANALYZED BY: JZL
DATE/TIME: 05/31/96 22:48:14
EXTRACTED BY: MF
DATE/TIME: 05/29/96 14:00:00
METHOD: 8310 Polynuclear Aromatic Hydrocarbons
NOTES: * - Practical Quantitation Limit
ND - Not Detected
NA - Not Analyzed
D - Diluted, control limits not applicable.

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9605952-07

Thompson Professional Grp,Inc
6110 Clarkson Lane
Houston, TX 77055
ATTN: John Laser

DATE: 06/07/96

PROJECT: Soil Bor/Grnd Water Mon B7,B8
SITE: Former Gary Air Force Base
SAMPLED BY: H.Platt Thompson Engineering
SAMPLE ID: B8-8705

PROJECT NO: LPST #108133
MATRIX: SOIL
DATE SAMPLED: 05/17/96 08:45:00
DATE RECEIVED: 05/17/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
BENZENE	< 5	5 P	µg/Kg
TOLUENE	< 5	5 P	µg/Kg
ETHYLBENZENE	< 5	5 P	µg/Kg
TOTAL XYLENE	< 5	5 P	µg/Kg
TOTAL BTEX	< 5		µg/Kg
Surrogate	**% Recovery**		
1,4-Difluorobenzene	91		
4-Bromofluorobenzene	125		
METHOD 5030/8020 ***			
Analyzed by: DY			
Date: 05/30/96			
TPH by Soxhlet/IR	46	10	mg/Kg
METHOD 3540/418.1			
Analyzed by: DR			
Date: 05/28/96 09:00:00			
Sonication extraction	05/29/96		
METHOD 3550 ***			
Analyzed by: MF			
Date: 05/29/96 14:00:00			
Solids	94	1	% Weight
CLP Inorganics SOW			
Analyzed by: ST			
Date: 05/20/96			

(P) - Practical Quantitation Limit ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9605952-07

Thompson Professional Grp,Inc
6110 Clarkson Lane
Houston, TX 77055
ATTN: John Laser

06/07/96

PROJECT: Soil Bor/Grnd Water Mon B7,B8
SITE: Former Gary Air Force Base
SAMPLED BY: H.Platt Thompson Engineering
SAMPLE ID: B8-8705

PROJECT NO: LPST #108133
MATRIX: SOIL
DATE SAMPLED: 05/17/96 08:45:00
DATE RECEIVED: 05/17/96

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Naphthalene	< 3000	3000	µg/Kg
Acenaphthylene	< 1500.0	1500.0	µg/Kg
Acenaphthene	< 5000	5000	µg/Kg
Fluorene	< 5600.0	5600.0	µg/Kg
Phenanthrene	< 5200.0	5200.0	µg/Kg
Anthracene	< 4500.0	4500.0	µg/Kg
Fluoranthene	< 3800.0	3800.0	µg/Kg
Pyrene	3600	3500.0	µg/Kg
Chrysene	< 2700.0	2700.0	µg/Kg
Benzo (a) anthracene	< 2700.0	2700.0	µg/Kg
Benzo (b) fluoranthene	5900	2200.0	µg/Kg
Benzo (k) fluoranthene	3100	2400.0	µg/Kg
Benzo (a) pyrene	< 1100.0	1100.0	µg/Kg
Dibenzo (a,h) anthracene	< 2400.0	2400.0	µg/Kg
Benzo (g,h,i) perylene	3500	3500.0	µg/Kg
Indeno (1,2,3-cd) pyrene	< 2600.0	2600.0	µg/Kg

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Biphenyl	µg/Kg	D	50	150
Coronene	µg/Kg	D	50	150

ANALYZED BY: JZL DATE/TIME: 05/30/96 21:22:33
EXTRACTED BY: MF DATE/TIME: 05/29/96 14:00:00
METHOD: 8310 Polynuclear Aromatic Hydrocarbons
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed
D - Diluted, control limits not applicable.

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

QUALITY CONTROL

DOCUMENTATION

** SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020***

PAGE

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Soil

Units: µg/Kg

Batch Id: VARE960529113500

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Benzene	ND	50	44	88.0	66 - 123
Toluene	ND	50	41	82.0	74 - 125
EthylBenzene	ND	50	43	86.0	84 - 125
O Xylene	ND	50	44	88.0	76 - 137
M & P Xylene	ND	100	81	81.0	81 - 131

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	Recovery Range
BENZENE	4	20	20	80.0	23	95.0	17.1	33	47 - 143
TOLUENE	7	20	16	45.0 *	19	60.0	28.6	35	46 - 148
ETHYLBENZENE	22	20	31	45.0	39	85.0	61.5 *	40	32 - 151
O XYLENE	8	20	15	35.0	16	40.0	13.3	24	35 - 143
M & P XYLENE	20	40	32	30.0	37	42.5	34.5	38	25 - 139

Analyst: DY
Sequence Date: 05/29/96
SPL ID of sample spiked: 9605964-04A
Sample File ID: E___918.TX0
Method Blank File ID:
Blank Spike File ID: E___899.TX0
Matrix Spike File ID: E___901.TX0
Matrix Spike Duplicate File ID: E___902.TX0

* = Values Outside QC Range
NC = Not Calculated (Sample exceeds spike by factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = |(<4> - <5> | / [(<4> + <5>) x 0.5] x 100
(**) = Source: SPL-Houston Historical Data (4th Q '95)
(***) = Source: SPL-Houston Historical Data (4th Q '95)

SAMPLES IN BATCH(SPL ID):

9605D61-09A 9605D61-10A 9605D61-11A 9605967-15A
9605967-16A 9605D61-12A 9605964-04A 9605964-01A
9605964-02A 9605964-05A 9605952-02A 9605952-03A
9605952-04A 9605952-07A 9605964-03A 9605952-1A
9605C94-14A 9605C94-13A 9605D61-08A

QC Officer

** SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020***

PAGE

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Water Soil

Units: µg/Kg

Batch Id: VARE960530065000

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Benzene	ND	50	50	100	66 - 123
Toluene	ND	50	48	96.0	74 - 125
EthylBenzene	ND	50	49	98.0	84 - 125
O Xylene	ND	50	48	96.0	76 - 137
M & P Xylene	ND	100	92	92.0	81 - 131

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
BENZENE	ND	20	18	90.0	17	85.0	5.71	33	47 - 143
TOLUENE	1	20	16	75.0	16	75.0	0	35	46 - 148
ETHYLBENZENE	ND	20	15	75.0	15	75.0	0	40	32 - 151
O XYLENE	ND	20	15	75.0	15	75.0	0	24	35 - 143
M & P XYLENE	ND	40	31	77.5	30	75.0	3.28	38	25 - 139

Analyst: DY
Sequence Date: 05/30/96
SPL ID of sample spiked: 9605942-13A
Sample File ID: E___943.TX0
Method Blank File ID:
Blank Spike File ID: E___929.TX0
Matrix Spike File ID: E___932.TX0
Matrix Spike Duplicate File ID: E___933.TX0

* = Values Outside QC Range
NC = Not Calculated (Sample exceeds spike by factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = |(<4> - <5> | / [(<4> + <5>) x 0.5] x 100
(**) = Source: SPL-Houston Historical Data (4th Q '95)
(***) = Source: SPL-Houston Historical Data (4th Q '95)

SAMPLES IN BATCH(SPL ID):

9605942-05A 9605942-08A 9605942-09A 9605942-11A
9605942-13A 9605942-12A 9605D61-18A 9605D61-15A
9605D61-19A 9605D61-14A 9605B84-02A 9605B84-03A
9605B84-07A 9605B84-05A 9605B84-06A 9605952-05A
9605952-06A

QC Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL BATCH QUALITY CONTROL REPORT **
METHOD EPA 8310

Matrix: Soil
Units: µg/Kg

Batch Id: 1960530113100

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Naphthalene	ND	16.7	12.2	73.1	1 - 122
Acenaphthylene	ND	16.7	16.0	95.8	1 - 139
Acenaphthene	ND	16.7	13.9	83.2	1 - 124
Fluorene	ND	16.7	20.3	122	1 - 142
Phenanthrene	ND	16.7	12.5	74.8	1 - 155
Anthracene	ND	16.7	10.6	63.5	1 - 126
Fluoranthene	ND	16.7	11.6	69.5	14 - 123
Pyrene	ND	16.7	13.5	80.8	1 - 140
Chrysene	ND	16.7	10.8	64.7	1 - 199
Benzo (a) anthracene	ND	16.7	14.4	86.2	12 - 135
Benzo (b) fluoranthene	ND	16.7	14.9	89.2	6 - 150
Benzo (k) fluoranthene	ND	16.7	15.1	90.4	1 - 159
Benzo (a) pyrene	ND	16.7	8.9	53.3	1 - 128
Dibenzo (a,h) anthracene	ND	16.7	13.7	82.0	1 - 110
Benzo (g,h,i) perylene	ND	16.7	13.1	78.4	1 - 116
Indeno (1,2,3-cd) pyrene	ND	16.7	17.4	104	1 - 116

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	Recovery Range
NAPHTHALENE	ND	16.65	44	264 *	25	150 *	55.1 *	30	1 - 122
ACENAPHTHYLENE	ND	16.65	47	282 *	27	162 *	54.1 *	30	1 - 139
ACENAPHTHENE	ND	16.65	22	132 *	14	84.1	44.3 *	30	1 - 124
FLUORENE	ND	16.65	32	192 *	23	138	32.7 *	30	1 - 142
PHENANTHRENE	ND	16.65	130	781 *	110	661 *	16.6	30	1 - 155
ANTHRACENE	ND	16.65	12	72.1	12	72.1	0	30	1 - 126
FLUORANTHENE	ND	16.65	26	156 *	26	156 *	0	30	14 - 142
PYRENE	ND	16.65	35	210 *	34	204 *	2.90	30	1 - 140
CHRYSENE	ND	16.65	75	450 *	73	438 *	2.70	30	1 - 199
BENZO (A) ANTHRACENE	ND	16.65	70	420 *	70	420 *	0	30	12 - 135
BENZO (B) FLUORANTHENE	ND	16.65	34	204 *	33	198 *	2.99	30	6 - 150
BENZO (K) FLUORANTHENE	ND	16.65	24	144	25	150	4.08	30	1 - 159
BENZO (A) PYRENE	ND	16.65	11	66.1	11	66.1	0	30	1 - 128
DIBENZO (A,H) ANTHRACENE	ND	16.65	14	84.1	14	84.1	0	30	1 - 110
BENZO (G,H,I) PERYLENE	ND	16.65	11	66.1	12	72.1	8.68	30	1 - 116
INDENO (1,2,3-CD) PYRENE	ND	16.65	16	96.1	17	102	5.96	30	1 - 116

QC Officer

** SPL BATCH QUALITY CONTROL REPORT **

METHOD EPA 8310

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Matrix: Soil

Units: µg/Kg

Batch Id: 1960530113100

Analyst: JZL

Sequence Date: 05/30/96

SPL ID of sample spiked: 9605952-05B

Sample File ID: 960531B\004-0201

Method Blank File ID:

Blank Spike File ID: 960530B\005-0201

Matrix Spike File ID: 960531B\002-0201

Matrix Spike Duplicate File ID: 960531B\003-0201

* = Values Outside QC Range

NC = Not Calculated (Sample exceeds spike by factor of 4 or more)

ND = Not Detected/Below Detection Limit

% Recovery = [(<1> - <2>) / <3>] x 100

LCS % Recovery = (<1> / <3>) x 100

Relative Percent Difference = |(<4> - <5> | / [(<4> + <5>) x 0.5] x 100

(**) = Source: 8310, Table 3

(***) = Source: Temporary Limits

SAMPLES IN BATCH(SPL ID):

9605952-05B 9605952-06B 9605A11-02B 9605A11-06B
9605952-02B 9605952-03B 9605952-04B 9605952-07B
9605952-01B

QC Officer

HOUSTON LABORATORY
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HOUSTON, TEXAS 77054
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** SPL QUALITY CONTROL REPORT **

Matrix: Soil

Reported on: 05/28/96
Analyzed on: 05/28/96
Analyst: DR

This sample was randomly selected for use in the SPL quality control program. Samples chosen are fortified with a known concentration in duplicate. The results are as follows:

TPH by Soxhlet/IR
METHOD 3540/418.1

SPL Sample ID Number	Blank Value mg/kg	Amt Added mg/kg	Matrix Spike Recovery %	Matrix Spike Duplicate Recovery %	Relative Percent Difference %	QC Limits Recovery	RPD Max.
9605952-02A	ND	200	83.5	68.5	20	68. - 125	20

960528DR -9605C28

Samples in batch:

9605952-01A 9605952-02A 9605952-03A 9605952-04A
9605952-05A 9605952-06A 9605952-07A 9605D66-01A

COMMENTS:

SPL, Incorporated

QC Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL QUALITY CONTROL REPORT **

Matrix: Soil

Reported on: 05/21/96
Analyzed on: 05/20/96
Analyst: ST

This sample was randomly selected for use in the SPL quality control program. The results are as follows:

Solids
CLP Inorganics SOW

-- DUPLICATE ANALYSIS --

SPL Sample ID	Original Sample Concentration % weight	Duplicate Sample % weight	RPD	RPD Max.
9605950-09C	80	81	1.2	20

-9605848

Samples in batch:

9605950-07C 9605950-08C 9605950-09C 9605951-12C
9605952-01B 9605952-02B 9605952-03B 9605952-04B
9605952-05B 9605952-06B

COMMENTS:

SPL Incorporated

QC Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL QUALITY CONTROL REPORT **

Matrix: Soil

Reported on: 05/21/96
Analyzed on: 05/20/96
Analyst: ST

This sample was randomly selected for use in the SPL quality control program. The results are as follows:

Solids
CLP Inorganics SOW

-- DUPLICATE ANALYSIS --

SPL Sample ID	Original Sample Concentration % weight	Duplicate Sample % weight	RPD	RPD Max.
9605952-07B	94	93	1.1	20

-9605849

Samples in batch:

9605952-07B	9605953-03C	9605953-04C	9605953-13C
9605954-02C	9605954-04C	9605954-08C	9605956-01C

COMMENTS:

SPL, Incorporated

QC Officer