

Final Technical Report

Site Investigation and Evaluation of Remediation Alternatives
for the Vernon Briggs Site, Matagorda County, Texas

(RRC Site No. 03-50218)

Volume II—Appendices

by

Jeri Sullivan
Alan Dutton
Robin Nava
Matthew Mahoney
James Gibeaut
Martina Blüm
Wan Joo Choi

Alan Dutton
Principal Investigator

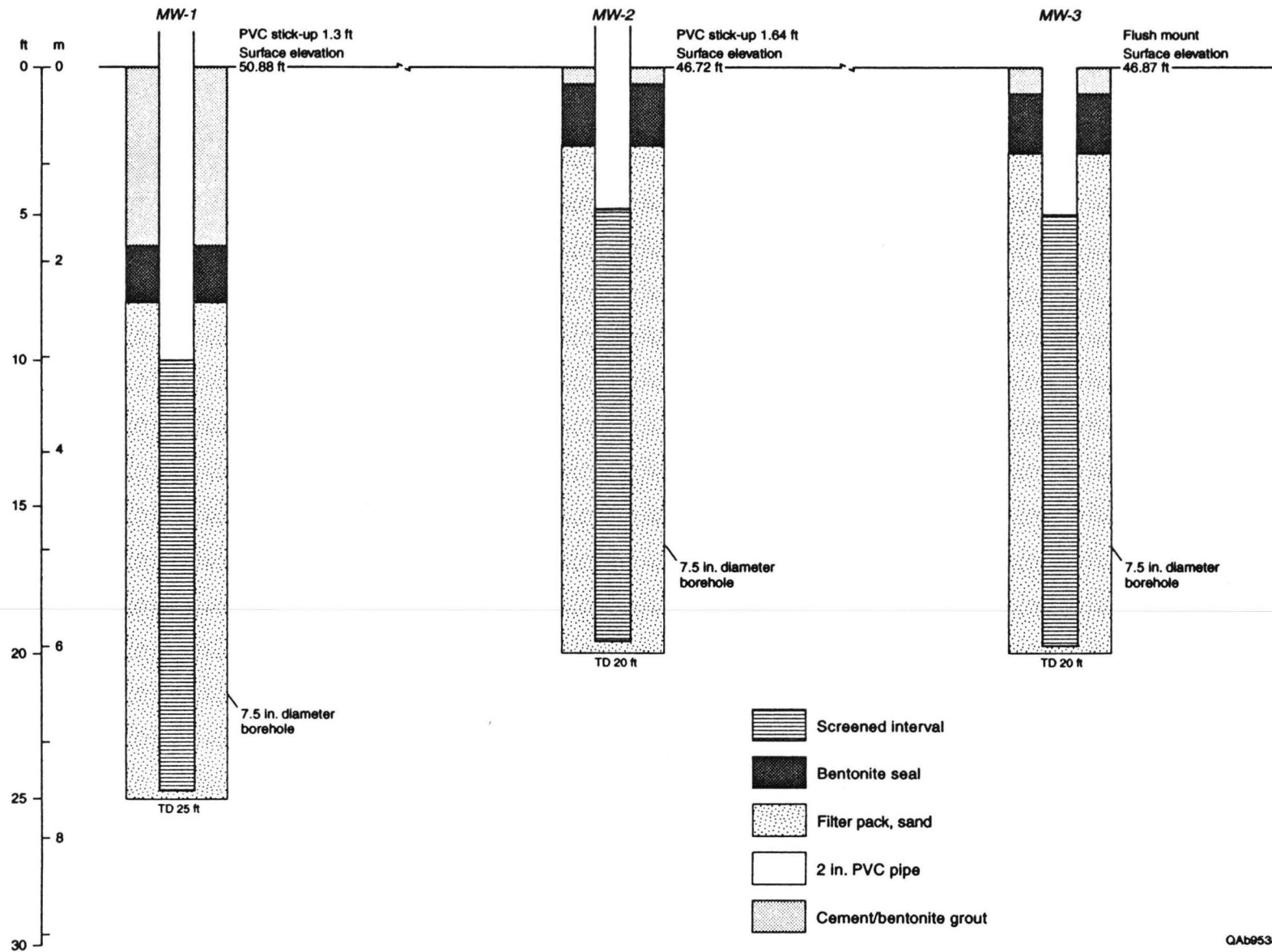
Prepared for

Railroad Commission of Texas
under Interagency Contract No. 96-0050

Bureau of Economic Geology
Noel Tyler, Director
The University of Texas at Austin
Austin, Texas 78713-8924

August 1999

APPENDIX A—CORE AND MONITORING-WELL DIAGRAMS



LOG OF BORING/MONITOR WELL NO. VB MW-1

DEPTH (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	SCREENING DATA				SUBMITTED for ANALYSIS	DEPTH (FT)	MONITOR WELL COMPLETION DATA	
				ODOR (*)	VISIBILITY (*)	DIRECT READING INSTRUMENT					
			Fill MATERIAL - silty, sandy clay, v. plastic, stiff, clay w/ 20% silt some sand, v. dark grayish brown, dry sparse gravel + asphalt gravel from 0.3' laminated clay layers	-	-					Annulus Materials	Well Materials
				-	-					GRout	Sch 40 2" PVC BLANK Riser PIPE
5			Silty Sandy Clay, v. plastic stiff, clay w/ 15% silt + 10% fine sand, brownish yellow grading into a yellowish red, dry, sparse slickensides, blocky structure - high ferrous content from 5.5 - 9.5' - increasing sand content w/ depth - abundant (ferrous nodules) 8.5 - 9.5'	-	-				5	BENTONITE SEAL	
10			loosely-sorted clayey sand, uniform, loose to medium dense, fine sand w/ 10% clay, v. pale brown, dry at 12' ferrous laminate - sandy clay layer - increasing clay content to 15-20%						10	20/40 silica SAND	SCH 40 2" PVC 0.010 SLOTTED WELL SCREEN
15			- decreasing clay content to 0% b becoming loose sand moderate Fe content from 15-25'						15		
20			- STA						20		
			- STA								
25									25		

Client: RRC Project No.: _____ Date Drilled: 7/16/77 Driller: MASTRE MONITORING
 Groundwater Elevation: _____ Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____
 Ground Elevation: _____ Top of Casing Elevation: _____ Drilling Method: HSA
 Total Depth: 25' Comments: _____

LOG OF BORING/MONITOR WELL NO. VB MW-2

LOG OF BORING/MONITOR WELL NO. VB MW-2							MONITOR WELL COMPLETION DATA		
DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	SCREENING DATA				DEPTH, (FT)	
				ODOR (*)	VISIBLE (*)	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS		
			GRASS COVER Silty, Sandy Clay, plastic, stiff clay w/ 15% silt + 20% fine sand, grayish brown, dry, moderate fissures content from 3-5'						Loc 1K Annulus Materials BENTONITE Well Materials SCH 40 2" PVC BLANK RISER
5			increasing clay content + ferrous content					5	20/40 SILICA SAND
10			Poorly Graded sand, uniform, loose, fine grain sand with 10% silt, v. pale brown, wet					10	SCH 40 2" PVC 0.010 SLOTTED WELL SCREEN
15			STA					15	
20			TD-20'					20	
25								25	

Client: RRC-VERNON BRIGGS Project No.: _____ Date Drilled: 7/16/97 Driller: MASTER MONITORING
 Groundwater Elevation: _____ Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____
 Ground Elevation: _____ Top of Casing Elevation: _____ Drilling Method: HSA
 Total Depth: 20' Comments: _____

LOG OF BORING/MONITOR WELL NO. VB MW-3

LOG OF BORING/MONITOR WELL NO. VB MW-3							MONITOR WELL COMPLETION DATA			
DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	SCREENING DATA				DEPTH, (FT)		
				ODOR (*)	VISIBLE (*)	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS			
			GRASS SURFACE COVER							
			FILL MATERIAL CLAYEY SILT, non plastic hard, silt w/ 60% clay grayish brown, dry, blocky structure.							
5			Silty Sandy clay, plastic, v. hard, clay w/ 20% sand & 20% silt, brownish yellow dry, blocky structure, some nodules at 6-7' moist at 5.5' & 9.5'							
			decrease in clay content							
			GRADING INTO							
10			Poorly graded sand, uniform, loose fine grain sand w/ 5% silt, v. pale brown, wet							
15			STA							
			STA							
20			TD-20'							
25										

Client: RRC-VERNON BRIGGS Project No.: _____ Date Drilled: 7/16/97 Driller: MASTER MONITORING
 Groundwater Elevation: _____ Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____
 Ground Elevation: _____ Top of Casing Elevation: _____ Drilling Method: HSA
 Total Depth: 20' Comments: _____

* 52134 *

200 - VERNON BRIGHS

[illegible]

Bore Hole
LOG OF BORING / MONITOR WELL NO. VB BH-1

DEPTH (FT.)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	DEPTH (FT.)	MONITOR WELL COMPLETION DATA	
							Annulus Materials	Well Materials
			inter mixed ^{grass cover} drilling mud & loam (sandy clay)					
5						5		
			Silty Sandy Clay, plastic, v. st. & f, clay w/ 10% silt 20% sand, brownish yellow, blocky structure, sparse ferrous content.			10		
10			✓ Poorly graded clayey sand, uniform fine grain sand w/ 10% clay, yellowish red, wet			10		
			- decreasing clay content with depth			15		
15			- no sand			15		
						20		
20						20		
			- clay cont increasing back to previous			25		
25						25		
30			clayey sand, uniform fine grain sand w/ 30% clay, dense yellowish red moist.			30		

TR 30'

Client: RRC - VERNON BRILBS Project No.: _____ Date Drilled: 7/17/97 Driller: Minister M.

Groundwater Elevation: _____ Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: _____ Top of Casing Elevation: _____ Drilling Method: HSH

Total Depth: 30' Comments: _____

APPENDIX B—LABORATORY REPORTS AND CHAINS OF CUSTODY

APPENDIX B—Waste Package Data

ChemSOLVE

11629 Manchaca Road
Austin, Texas 78748

Phone: 512-280-7680 FAX: 512-280-7651

Email: Chemsolve@aol.com

WWW: <http://www.eden.com/~chemsolv/>

TO RRC LAB

REPORT TO:	BILL TO:
CONTACT JERI SULLIVAN	
COMPANY BEG - UT AUSTIN	
ADDRESS	
PHONE 471 6285 FAX 471-0140	

CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD

Page ____ of ____

Project Name: VERNON BRIGGS

Project No.:

Turnaround: ASAP

Analytical Request:

Sample ID	Date	Time	No. of Cont.	Matrix	TPH + CHLORIDES	VOCs / MIBK	PAHs (15+20)	PEST / PCB	TOX	RCRA 8	E. COND	TCLP	ZANDER 3	Lab Number	Comments
2001	5/20/97	1630	1	SED	X					X	X				5100 W100
2000	5/21/97	0855	1	SED	X					X	X				5200 W100
2002		0921	1	SED	X					X	X				5100 W200 SURFACE (S)
2003		0921	1	SED	X						X				5100 W200 SURFACE
2004		1036	1	SED	X					X	X				5200 W200
2005		1036	1	SED	X						X				5200 W200 SURFACE
2007		1125	1	SED	X						X				5100 W300 SURFACE
2008		1125	1	SED	X					X	X				5100 W300
2009		1231	1	SED	X						X				5100 W400 SURFACE
2010		1231	1	SED	X					X	X				5100 W400 SURFACE
2011		1419	1	SED	X						X				5200 W400 SURFACE

Relinquished By	Date	Time	Received By	Carrier	Date	Time

1 TCLP = VOC, SVOC, METALS, R/C/I

**RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY**

Soil Analysis Report

Lab No. 3541E

RRC Custody Tag No.

Sample Identification: Vernon Briggs Project, BEG - UT Austin, Sample ID 2000

Submitted by: Special Response

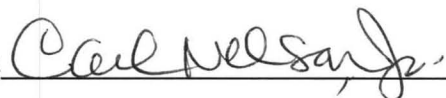
Date Collected:

Date Received: 05-23-1997 Date Completed: 06-16-1997

ANALYSIS		VALUE	UNITS
-----		-----	-----
Arsenic	TOTAL	<0.5	mg/kg
Barium	TOTAL	90.	mg/kg
Cadmium	TOTAL	<0.5	mg/kg
Chloride (1:1 extract)		4959.	mg/L
Chromium	TOTAL	145.	mg/kg
Electrical Conductivity 1:1 Extract		16	mmhos/cm
Lead	TOTAL	<0.5	mg/kg
Mercury	TOTAL	<0.1	mg/kg
Moisture		46	%
Oil and Grease (as % dry solids)		2.2	%
Selenium	TOTAL	<0.5	mg/kg
Silver	TOTAL	<0.5	mg/kg
Total Petroleum Hydrocarbons		1.3	%

Comments:

Data Verification



**RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY**

Soil Analysis Report

Lab No. 3540E

RRC Custody Tag No.

Sample Identification: Vernon Briggs Project, BEG - UT Austin, Sample ID 2001

Submitted by: Special Response

Date Collected:

Date Received: 05-23-1997 Date Completed: 06-16-1997

ANALYSIS		VALUE	UNITS
Arsenic	TOTAL	<0.5	mg/kg
Barium	TOTAL	73.	mg/kg
Cadmium	TOTAL	<0.5	mg/kg
Chloride (1:1 extract)		5118.	mg/L
Chromium	TOTAL	138.	mg/kg
Electrical Conductivity	1:1 Extract	17	mmhos/cm
Lead	TOTAL	<0.5	mg/kg
Mercury	TOTAL	<0.1	mg/kg
Moisture		42	%
Oil and Grease (as % dry solids)		1.6	%
Selenium	TOTAL	<0.5	mg/kg
Silver	TOTAL	<0.5	mg/kg
Total Petroleum Hydrocarbons		0.83	%

Comments:

Data Verification

Carol Nelson, Jr.

**RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY**

Soil Analysis Report

Lab No. 3542E

RRC Custody Tag No.

Sample Identification: Vernon Briggs Project, BEG - UT Austin, Sample ID 2002

Submitted by: Special Response

Date Collected:

Date Received: 05-23-1997 Date Completed: 06-16-1997

ANALYSIS		VALUE	UNITS
-----		-----	-----
Arsenic	TOTAL	<0.5	mg/kg
Barium	TOTAL	110.	mg/kg
Cadmium	TOTAL	<0.5	mg/kg
Chloride (1:1 extract)		8536.	mg/L
Chromium	TOTAL	144.	mg/kg
Electrical Conductivity 1:1 Extract		26	mmhos/cm
Lead	TOTAL	<0.5	mg/kg
Mercury	TOTAL	<0.1	mg/kg
Moisture		41	%
Oil and Grease (as % dry solids)		1.3	%
Selenium	TOTAL	<0.5	mg/kg
Silver	TOTAL	<0.5	mg/kg
Total Petroleum Hydrocarbons		0.85	%

Comments:

Data Verification

Carl Nelson Jr.

RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY

Soil Analysis Report

Lab No. 3543E

RRC Custody Tag No.

Sample Identification: Vernon Briggs Project, BEG - UT Austin, Sample ID 2003

Submitted by: Special Response

Date Collected:

Date Received: 05-23-1997 Date Completed: 06-16-1997

ANALYSIS	VALUE	UNITS
Chloride (1:1 extract)	5412.	mg/L
Electrical Conductivity 1:1 Extract	18	mmhos/cm
Moisture	28	%
Oil and Grease (as % dry solids)	0.83	%
Total Petroleum Hydrocarbons	0.53	%

Comments:

Data Verification

Carol Nelson

**RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY**

Soil Analysis Report

Lab No. 3544E

RRC Custody Tag No.

Sample Identification: Vernon Briggs Project, BEG - UT Austin, Sample ID 2004

Submitted by: Special Response

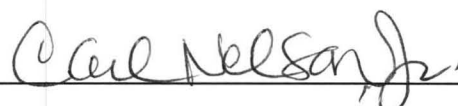
Date Collected:

Date Received: 05-23-1997 Date Completed: 06-16-1997

ANALYSIS		VALUE	UNITS
Arsenic	TOTAL	<0.5	mg/kg
Barium	TOTAL	125.	mg/kg
Cadmium	TOTAL	<0.5	mg/kg
Chloride (1:1 extract)		6815.	mg/L
Chromium	TOTAL	161.	mg/kg
Electrical Conductivity 1:1 Extract		22	mmhos/cm
Lead	TOTAL	<0.5	mg/kg
Mercury	TOTAL	<0.1	mg/kg
Moisture		41	%
Oil and Grease (as % dry solids)		1.5	%
Selenium	TOTAL	<0.5	mg/kg
Silver	TOTAL	<0.5	mg/kg
Total Petroleum Hydrocarbons		0.89	%

Comments:

Data Verification



RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY

Soil Analysis Report

Lab No. 3545E

RRC Custody Tag No.

Sample Identification: Vernon Briggs Project, BEG - UT Austin, Sample ID 2005

Submitted by: Special Response

Date Collected:

Date Received: 05-23-1997 Date Completed: 06-16-1997

ANALYSIS	VALUE	UNITS
Chloride (1:1 extract)	5712.	mg/L
Electrical Conductivity 1:1 Extract	10	mmhos/cm
Moisture	20	%
Oil and Grease (as % dry solids)	2.5	%
Total Petroleum Hydrocarbons	1.7	%

Comments:

Data Verification Carl Nelson Jr.

RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY

Soil Analysis Report

Lab No. 3546E

RRC Custody Tag No.

Sample Identification: Vernon Briggs Project, BEG - UT Austin, Sample ID 2007

Submitted by: Special Response

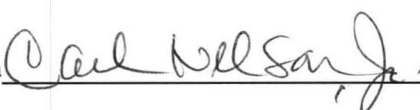
Date Collected:

Date Received: 05-23-1997 Date Completed: 06-16-1997

ANALYSIS	VALUE	UNITS
Chloride (1:1 extract)	575.	mg/L
Electrical Conductivity 1:1 Extract	2.8	mmhos/cm
Moisture	23	%
Oil and Grease (as % dry solids)	0.13	%
Total Petroleum Hydrocarbons	0.05	%

Comments:

Data Verification



RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY

Soil Analysis Report

Lab No. 3547E

RRC Custody Tag No.

Sample Identification: Vernon Briggs Project, BEG - UT Austin, Sample ID 2008

Submitted by: Special Response

Date Collected:

Date Received: 05-23-1997 Date Completed: 06-16-1997

ANALYSIS	VALUE	UNITS
Arsenic TOTAL	<0.5	mg/kg
Barium TOTAL	107.	mg/kg
Cadmium TOTAL	<0.5	mg/kg
Chloride (1:1 extract)	6667.	mg/L
Chromium TOTAL	188.	mg/kg
Electrical Conductivity 1:1 Extract	20	mmhos/cm
Lead TOTAL	<0.5	mg/kg
Mercury TOTAL	<0.1	mg/kg
Moisture	32	%
Oil and Grease (as % dry solids)	3.1	%
Selenium TOTAL	<0.5	mg/kg
Silver TOTAL	<0.5	mg/kg
Total Petroleum Hydrocarbons	2.1	%

Comments:

Data Verification

Carl Nelson Jr.

**RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY**

Soil Analysis Report

Lab No. 3548E

RRC Custody Tag No.

Sample Identification: Vernon Briggs Project, BEG - UT Austin, Sample ID 2009

Submitted by: Special Response

Date Collected:

Date Received: 05-23-1997 Date Completed: 06-16-1997

ANALYSIS	VALUE	UNITS
Chloride (1:1 extract)	584.	mg/L
Electrical Conductivity 1:1 Extract	2.6	mmhos/cm
Moisture	22	%
Oil and Grease (as % dry solids)	0.09	%
Total Petroleum Hydrocarbons	0.04	%

Comments:

Data Verification Carl Nelson Jr.

**RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY**

Soil Analysis Report

Lab No. 3549E

RRC Custody Tag No.

Sample Identification: Vernon Briggs Project, BEG - UT Austin, Sample ID 2010

Submitted by: Special Response

Date Collected:

Date Received: 05-23-1997 Date Completed: 06-16-1997

ANALYSIS		VALUE	UNITS
Arsenic	TOTAL	<0.5	mg/kg
Barium	TOTAL	84.	mg/kg
Cadmium	TOTAL	<0.5	mg/kg
Chloride (1:1 extract)		6360	mg/L
Chromium	TOTAL	212.	mg/kg
Electrical Conductivity	1:1 Extract	21	mmhos/cm
Lead	TOTAL	<0.5	mg/kg
Mercury	TOTAL	<0.1	mg/kg
Moisture		41	%
Oil and Grease (as % dry solids)		3.0	%
Selenium	TOTAL	<0.5	mg/kg
Silver	TOTAL	<0.5	mg/kg
Total Petroleum Hydrocarbons		2.0	%

Comments:

Data Verification

Carl Nelson Jr.

RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY

Soil Analysis Report

Lab No. 3550E

RRC Custody Tag No.

Sample Identification: Vernon Briggs Project, BEG - UT Austin, Sample ID 2011

Submitted by: Special Response

Date Collected:

Date Received: 05-23-1997 Date Completed: 06-16-1997

ANALYSIS	VALUE	UNITS
Chloride (1:1 extract)	340.	mg/L
Electrical Conductivity 1:1 Extract	1.7	mmhos/cm
Moisture	22	%
Oil and Grease (as % dry solids)	0.34	%
Total Petroleum Hydrocarbons	0.21	%

Comments:

Data Verification

Carl Nelson, Jr.

ChemSOLVE

11629 Manchaca Road

Austin, Texas 78748

Phone: 512-280-7680 FAX: 512-280-7651

Email: Chemsolve@aol.com

WWW: <http://www.eden.com/~chemsolv/>

90 KRC LHS

REPORT TO:	BILL TO:
CONTACT <i>JERI SULLIVAN</i>	
COMPANY <i>BEG UT AUSTIN</i>	
ADDRESS	
PHONE <i>471 6285</i> FAX <i>471-0140</i>	

CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD

Page _____ of _____

Project Name: *VERNON BRIGGS*

Project No.:

Turnaround: *ASAP*

Analytical Request:

Sample ID	Date	Time	No. of Cont.	Matrix	TPH + CHLORIDE	PCRA8	ELEC. COND.										Lab Number	Comments
<i>2014</i>	<i>5/21/97</i>	<i>1419</i>	<i>1</i>	<i>SED</i>	<i>X</i>	<i>X</i>	<i>X</i>											<i>S200 W400</i>
<i>2013</i>	<i>5/22/97</i>	<i>0655</i>	<i>1</i>	<i>SED</i>	<i>X</i>	<i>X</i>	<i>X</i>											<i>S200 W300</i>
<i>2015</i>	<i>5/22/97</i>	<i>0655</i>	<i>1</i>	<i>SED</i>	<i>X</i>		<i>X</i>											<i>SURFACE</i> <i>S200 W300</i>
<i>2016</i>	<i>5/22/97</i>	<i>0716</i>	<i>1</i>	<i>SED</i>	<i>X</i>		<i>X</i>											<i>SURFACE</i> <i>S300 W300</i>
<i>2017</i>	<i>5/22/97</i>	<i>0716</i>	<i>1</i>	<i>SED</i>	<i>X</i>	<i>X</i>	<i>X</i>											<i>S300 W300</i>

Relinquished By

Date

Time

Received By

Carrier

Date

Time

<i>[Signature]</i>						

**RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY**

Soil Analysis Report

Lab No. 3552E

RRC Custody Tag No.

Sample Identification: Vernon Briggs Project, BEG - UT Austin, Sample ID 2013

Submitted by: Special Response

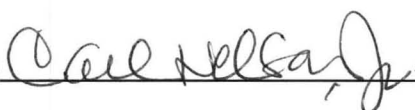
Date Collected:

Date Received: 05-23-1997 Date Completed: 06-16-1997

ANALYSIS		VALUE	UNITS
-----		-----	-----
Arsenic	TOTAL	<0.5	mg/kg
Barium	TOTAL	69.	mg/kg
Cadmium	TOTAL	<0.5	mg/kg
Chloride (1:1 extract)		4461.	mg/L
Chromium	TOTAL	147.	mg/kg
Electrical Conductivity	1:1 Extract	15	mmhos/cm
Lead	TOTAL	<0.5	mg/kg
Mercury	TOTAL	<0.1	mg/kg
Moisture		35	%
Oil and Grease (as % dry solids)		1.8	%
Selenium	TOTAL	<0.5	mg/kg
Silver	TOTAL	<0.5	mg/kg
Total Petroleum Hydrocarbons		0.81	%

Comments:

Data Verification



RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY

Soil Analysis Report

Lab No. 3551E

RRC Custody Tag No.

Sample Identification: Vernon Briggs Project, BEG - UT Austin, Sample ID 2014

Submitted by: Special Response

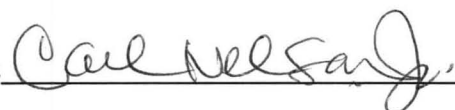
Date Collected:

Date Received: 05-23-1997 Date Completed: 06-16-1997

ANALYSIS	VALUE	UNITS
Arsenic TOTAL	<0.5	mg/kg
Barium TOTAL	68.	mg/kg
Cadmium TOTAL	<0.5	mg/kg
Chloride (1:1 extract)	8184.	mg/L
Chromium TOTAL	354.	mg/kg
Electrical Conductivity 1:1 Extract	25	mmhos/cm
Lead TOTAL	<0.5	mg/kg
Mercury TOTAL	<0.1	mg/kg
Moisture	45	%
Oil and Grease (as % dry solids)	2.7	%
Selenium TOTAL	<0.5	mg/kg
Silver TOTAL	<0.5	mg/kg
Total Petroleum Hydrocarbons	1.6	%

Comments:

Data Verification



RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY

Soil Analysis Report

Lab No. 3553E

RRC Custody Tag No.

Sample Identification: Vernon Briggs Project, BEG - UT Austin, Sample ID 2015

Submitted by: Special Response

Date Collected:

Date Received: 05-23-1997 Date Completed: 06-16-1997

ANALYSIS	VALUE	UNITS
Chloride (1:1 extract)	283.	mg/L
Electrical Conductivity 1:1 Extract	1.9	mmhos/cm
Moisture	43	%
Oil and Grease (as % dry solids)	0.75	%
Total Petroleum Hydrocarbons	0.55	%

Comments:

Data Verification

Carol Nelson Jr.

RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY

Soil Analysis Report

Lab No. 3554E

RRC Custody Tag No.

Sample Identification: Vernon Briggs Project, BEG - UT Austin, Sample ID 2016

Submitted by: Special Response

Date Collected:

Date Received: 05-23-1997 Date Completed: 06-16-1997

ANALYSIS	VALUE	UNITS
Chloride (1:1 extract)	3290.	mg/L
Electrical Conductivity 1:1 Extract	12	mmhos/cm
Moisture	32	%
Oil and Grease (as % dry solids)	0.37	%
Total Petroleum Hydrocarbons	0.25	%

Comments:

Data Verification

Carl Nelson Jr.

RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY

Soil Analysis Report

Lab No. 3555E

RRC Custody Tag No.

Sample Identification: Vernon Briggs Project, BEG - UT Austin, Sample ID 2017

Submitted by: Special Response

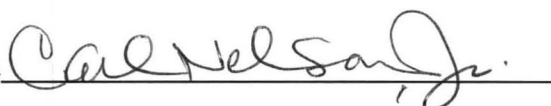
Date Collected:

Date Received: 05-23-1997 Date Completed: 06-16-1997

ANALYSIS	VALUE	UNITS
Arsenic TOTAL	<0.5	mg/kg
Barium TOTAL	73.	mg/kg
Cadmium TOTAL	<0.5	mg/kg
Chloride (1:1 extract)	7905	mg/L
Chromium TOTAL	289.	mg/kg
Electrical Conductivity 1:1 Extract	26	mmhos/cm
Lead TOTAL	<0.5	mg/kg
Mercury TOTAL	<0.1	mg/kg
Moisture	59	%
Oil and Grease (as % dry solids)	2.3	%
Selenium TOTAL	<0.5	mg/kg
Silver TOTAL	<0.5	mg/kg
Total Petroleum Hydrocarbons	1.7	%

Comments:

Data Verification



ChemSOLVE

11629 Manchaca Road
Austin, Texas 78748

Phone: 512-280-7680 FAX: 512-280-7651

Email: Chemsolve@aol.com

WWW: <http://www.eden.com/~chemsolv/>

REPORT TO:

CONTACT JERI SULLIVAN

COMPANY BEG - UT AUSTIN

ADDRESS

PHONE 471 6285 FAX 471 0140

BILL TO:

CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD

Page 1 of 2

Project Name: VERNON BRIGGS

Project No.:

Turnaround: ASAP

Analytical Request:

NOTE = SAT. PASTE EC
ON 2018

Sample ID	Date	Time	No. of Cont.	Matrix	TPH + CHLORIDES	VOCs / MTBE	PAHs (8270)	PEST/PCB	TOX	RCRA 8	E.COND	TCLP I / RCI	LANDFARM 2	MOISTURE / DENSITY	Lab Number	Comments
2006	5/21/97	1125	1	Soil	X	X	X	X	X		X	X		X	27057 S	S100 W300
2012	5/22/97	0740	1	Soil	X	X	X	X	X		X	X		X	27058 S	S300 W400
2018	5/22/97	0750	1	SOIL	X					X	X		X	X	27059 S	S300 W400
2019	5/22/97	0800	1	SOIL	X					X	X			X	27060 S	SURFACE S300 W400
2020		0822	1	SOIL	X					X	X			X	27061 S	SURFACE S400 W400
2021		0822	1	SOIL	X					X	X			X	27062 S	S400 W400
2022		0857	1	SOIL	X						X			X	27063 S	SURFACE S400 W300
2023		0857	1	SOIL	X					X	X		X	X	27064 S	S400 W300
2024		1000	1	SOIL	X						X			X	27065 S	SURFACE S400 W200
2025		1000	1	SOIL	X					X	X		X	X	27066 S	S400 W200
2026		1021	1	SOIL	X						X			X	27067 S	SURFACE S300 W200

Relinquished By

Date

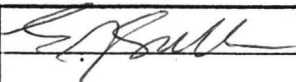
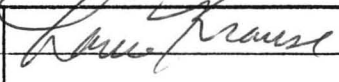
Time

Received By

Carrier

Date

Time

	5/23/97	1500		Priority	5/22	5:40 PM

1 TCLP = VOCs, SVOCs, METALS, R/C/I

2 LANDFARM = TOTAL NITROGEN, NITRATE, AMMONIA NITROGEN, PHOSPHATE, POTASSIUM, ZINC, COPPER

ChemSOLVE

11629 Manchaca Road
Austin, Texas 78748

Phone: 512-280-7680 FAX: 512-280-7651

Email: Chemsolve@aol.com

WWW: <http://www.eden.com/~chemsolv/>

REPORT TO:	BILL TO:
CONTACT <u>TERI SULLIVAN</u>	
COMPANY <u>BEG - UT AUSTIN</u>	
ADDRESS	
PHONE <u>471 6285</u> FAX <u>471 0140</u>	

CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD

Page 2 of 2

Project Name: <u>VERNON BRIGGS</u>					Analytical Request:													
Project No.:																		
Turnaround: <u>ASAP</u>																		
Sample ID	Date	Time	No. of Cont.	Matrix	TPH + Chloride	RCRA8	E.COND.	MOISTURE / DENSITY	PAH'S (8270)								Lab Number	Comments
2027	5/22/97	1021	1	SOIL	X	X	X	X									✓ 27068	S 5300 W200
2028		1101	1	SOIL	X		X										✓ 27069	S 5300 W100 ^{Surface}
2029		1101	1	SOIL	X	X	X	X									✓ 27070	S 5300 W100
2030		1134	1	SOIL	X		X										✓ 27071	S 5475 W200 ^{Surface}
2031		1134	1	SOIL	X	X	X	X									✓ 27072	S 5475 W200
2032		1354	1	SOIL	X	X	X	X	X								✓ 27073	S 5600 W200
2033		1432	1	SOIL	X	X	X	X									✓ 27074	S 5600 W300
2034		1444	1	SOIL	X	X	X	X	X								✓ 27075	S 5600 W400
2035		1550	1	SOIL	X	X	X	X	X								✓ 27076	S STA 27

Relinquished By	Date	Time	Received By	Carrier	Date	Time
<u>[Signature]</u>	5/23/97	1500	<u>[Signature]</u>	Priority	5/23	5:40 pm

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759

512-471-0140

Report #: 27057

Report of Laboratory Analysis

Project: Vernon Briggs

Sample: 2006

Matrix: soil

Date/Time Taken: 5/21/97 11:25

Date/Time Rec'd: 5/23/97 17:40

Parameter	Result	Units	Limit	PQL	Method	Date/Time	Run	By
Ignitability	>150	° F	150	75	1010	5/29/97	19:52	MCK
Moisture	23.1	% dry wt		0.1	ASA	6/6/97	10:20	LBK
pH	9.4				9045	5/30/97	13:00	LBK
Specific Conductance	19010	µS/cm			120.1	6/4/97	9:00	LBK
Petroleum hydrocarbons	14,000	mg/Kg		2250	418.1	6/5/97	12:30	LBK
Reactivity cyanide	<10	mg/Kg	250	10	7.3.3.1	5/29/97	23:31	MCK
Reactivity sulfide	<10	mg/Kg	500	10	7.3.3.2	5/29/97	22:26	MCK
Total organic halogen	<1	mg/Kg		1	9020	5/29/97	22:16	MCK
TC Arsenic	0.048	mg/L	5	0.005	6010	5/29/97	19:51	MCK
TC Barium	7.0	mg/L	100	0.005	6010	5/29/97	19:51	MCK
TC Cadmium	<0.005	mg/L	1	0.005	6010	5/29/97	19:51	MCK
TC Chromium	<0.005	mg/L	5	0.005	6010	5/29/97	19:51	MCK
TC Lead	0.019	mg/L	5	0.005	6010	5/29/97	19:51	MCK
TC Mercury	<0.001	mg/L	0.2	0.001	7470	5/29/97	16:59	MCK
TC Selenium	<0.005	mg/L	1	0.005	6010	5/29/97	19:51	MCK
TC Silver	<0.005	mg/L	5	0.005	6010	5/29/97	19:51	MCK
Chloride	13,000	mg/Kg		5	300.1	6/4/97	7:41	LBK
TC 1,1-dichloroethene	<0.005	mg/L	0.7	0.25	8260	5/29/97	8:37	KLM
TC 1,2-dichloroethane	<0.005	mg/L	0.5	0.25	8260	5/29/97	8:37	KLM
TC 1,4-dichlorobenzene	<0.005	mg/L	7.5	0.25	8260	5/29/97	8:37	KLM
TC 2-butanone (MEK)	<0.05	mg/L	200	2.5	8260	5/29/97	8:37	KLM
TC Benzene	<0.005	mg/L	0.5	0.25	8260	5/29/97	8:37	KLM
TC Carbon tetrachloride	<0.005	mg/L	0.5	0.25	8260	5/29/97	8:37	KLM
TC Chlorobenzene	<0.005	mg/L	100	0.25	8260	5/29/97	8:37	KLM
TC Chloroform	<0.005	mg/L	6	0.25	8260	5/29/97	8:37	KLM
TC Tetrachloroethene	<0.005	mg/L	0.7	0.25	8260	5/29/97	8:37	KLM
TC Trichloroethene	<0.005	mg/L	0.5	0.25	8260	5/29/97	8:37	KLM

CHEMSOLVE

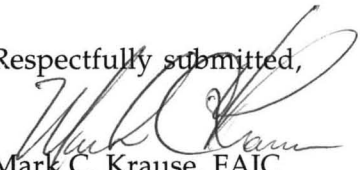
environmental analytical services

11629 Manchaca Road • Austin, Texas 78748 • (512) 280-7680

Parameter	Result	Units	Limit	PQL	Method	Date/Time	Run	By
TC Vinyl chloride	<0.005	mg/L	0.2	0.25	8260	5/29/97	8:37	KLM
TC 2,4-dinitrotoluene	<0.020	mg/L	0.13	0.02	8270	6/2/97	17:09	KLM
TC 2-methyphenol	<0.020	mg/L	200	0.02	8270	6/2/97	17:09	KLM
TC 3&4-methylphenol	<0.020	mg/L	200	0.02	8270	6/2/97	17:09	KLM
TC Hexachlorobenzene	<0.020	mg/L	0.13	0.02	8270	6/2/97	17:09	KLM
TC Hexachlorobutadiene	<0.020	mg/L	0.5	0.02	8270	6/2/97	17:09	KLM
TC Hexachloroethane	<0.020	mg/L	3	0.02	8270	6/2/97	17:09	KLM
TC Nitrobenzene	<0.020	mg/L	2	0.02	8270	6/2/97	17:09	KLM
TC Pentachlorophenol	<0.100	mg/L	100	0.1	8270	6/2/97	17:09	KLM
TC Pyridine	<0.040	mg/L	5	0.04	8270	6/2/97	17:09	KLM

Organic parameters follow this page

Respectfully submitted,


Mark C. Krause, FAIC

Project: Vernon Briggs
Sample: 2006**Report #:** 27057

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
2,4'-DDD	<1	µg/Kg	1	8080	6/2/97	14:17	KLM
2,4'-DDE	<1	µg/Kg	1	8080	6/2/97	14:17	KLM
2,4'-DDT	<1	µg/Kg	1	8080	6/2/97	14:17	KLM
4,4'-DDD	<1	µg/Kg	1	8080	6/2/97	14:17	KLM
4,4'-DDE	<1	µg/Kg	1	8080	6/2/97	14:17	KLM
4,4'-DDT	<1	µg/Kg	1	8080	6/2/97	14:17	KLM
Aldrin	<0.2	µg/Kg	0.2	8080	6/2/97	14:17	KLM
alpha-BHC	<0.5	µg/Kg	0.5	8080	6/2/97	14:17	KLM
alpha-Chlordane	<50	µg/Kg	50	8080	6/2/97	14:17	KLM
Arochlor 1016	<50	µg/Kg	50	8080	6/2/97	14:17	KLM
Arochlor 1221	<50	µg/Kg	50	8080	6/2/97	14:17	KLM
Arochlor 1232	<50	µg/Kg	50	8080	6/2/97	14:17	KLM
Arochlor 1242	<50	µg/Kg	50	8080	6/2/97	14:17	KLM
Arochlor 1248	<50	µg/Kg	50	8080	6/2/97	14:17	KLM
Arochlor 1254	<50	µg/Kg	50	8080	6/2/97	14:17	KLM
Arochlor 1260	<50	µg/Kg	50	8080	6/2/97	14:17	KLM
beta-BHC	<0.5	µg/Kg	0.5	8080	6/2/97	14:17	KLM
delta-BHC	<0.5	µg/Kg	0.5	8080	6/2/97	14:17	KLM
Dieldrin	<0.2	µg/Kg	0.2	8080	6/2/97	14:17	KLM
Endosulfan I	<1	µg/Kg	1	8080	6/2/97	14:17	KLM
Endosulfan II	<1	µg/Kg	1	8080	6/2/97	14:17	KLM
Endosulfan sulfate	<5	µg/Kg	5	8080	6/2/97	14:17	KLM
Endrin	<0.5	µg/Kg	0.5	8080	6/2/97	14:17	KLM
Endrin aldehyde	<5	µg/Kg	5	8080	6/2/97	14:17	KLM
gamma-Chlordane	<50	µg/Kg	50	8080	6/2/97	14:17	KLM
Heptachlor	<0.5	µg/Kg	0.5	8080	6/2/97	14:17	KLM
Heptachlor epoxide	<5	µg/Kg	5	8080	6/2/97	14:17	KLM
Lindane	<0.5	µg/Kg	0.5	8080	6/2/97	14:17	KLM
Methoxychlor	<50	µg/Kg	50	8080	6/2/97	14:17	KLM
Toxaphene	<200	µg/Kg	200	8080	6/2/97	14:17	KLM
1,1,1,2-tetrachloroethane	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
1,1,1-trichloroethane	<250	µg/Kg	250	8260	6/23/97	18:43	KLM

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
1,1,2,2-tetrachloroethane	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
1,1,2-trichloroethane	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
1,1-dichloroethane	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
1,1-dichloroethene	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
1,2,3-trichloropropane	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
1,2,4-trichlorobenzene	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
1,2-dibromoethane	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
1,2-dichlorobenzene	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
1,2-dichloroethane	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
1,2-dichloropropane	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
1,3,5-trichlorobenzene	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
1,3-dichlorobenzene	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
1,4-dichlorobenzene	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
2-butanone	<2500	µg/Kg	2500	8260	6/23/97	18:43	KLM
2-chlorotoluene	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
2-Hexanone	<500	µg/Kg	500	8260	6/23/97	18:43	KLM
4-chlorotoluene	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
4-methyl-2-pentanone	<500	µg/Kg	500	8260	6/23/97	18:43	KLM
Acetone	<2500	µg/Kg	2500	8260	6/23/97	18:43	KLM
Benzene	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
Bromobenzene	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
Bromodichloromethane	<500	µg/Kg	250	8260	6/23/97	18:43	KLM
Bromoform	<500	µg/Kg	500	8260	6/23/97	18:43	KLM
Bromomethane	<500	µg/Kg	500	8260	6/23/97	18:43	KLM
Carbon disulfide	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
Carbon tetrachloride	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
Chlorobenzene	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
Chlorodibromomethane	<500	µg/Kg	250	8260	6/23/97	18:43	KLM
Chloroethane	<500	µg/Kg	500	8260	6/23/97	18:43	KLM
Chloroform	<500	µg/Kg	250	8260	6/23/97	18:43	KLM
Chloromethane	<500	µg/Kg	500	8260	6/23/97	18:43	KLM
cis-1,2-dichloroethene	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
cis-1,3-dichloropropene	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
Dibromomethane	<500	µg/Kg	500	8260	6/23/97	18:43	KLM
Dichlorodifluoromethane	<500	µg/Kg	500	8260	6/23/97	18:43	KLM
Ethylbenzene	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
m,p-Xylenes	<250	µg/Kg	250	8260	6/23/97	18:43	KLM

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Methylene chloride	<500	µg/Kg	500	8260	6/23/97	18:43	KLM
Naphthalene	3,800	µg/Kg	250	8260	6/23/97	18:43	KLM
o-Xylene	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
Styrene	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
Tetrachloroethene	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
Toluene	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
trans-1,2-dichloroethene	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
trans-1,3-dichloropropene	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
Trichloroethene	<250	µg/Kg	250	8260	6/23/97	18:43	KLM
Trichlorofluoromethane	<500	µg/Kg	500	8260	6/23/97	18:43	KLM
Vinyl chloride	<500	µg/Kg	500	8260	6/23/97	18:43	KLM
Acenaphthene	<1000	µg/Kg	1000	8270	6/3/97	10:59	KLM
Acenaphthylene	<1000	µg/Kg	1000	8270	6/3/97	10:59	KLM
Anthracene	<1000	µg/Kg	1000	8270	6/3/97	10:59	KLM
Benzo(a)anthracene	<1000	µg/Kg	1000	8270	6/3/97	10:59	KLM
Benzo(a)pyrene	<1000	µg/Kg	1000	8270	6/3/97	10:59	KLM
Benzo(b)fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	10:59	KLM
Benzo(ghi)perylene	<1000	µg/Kg	1000	8270	6/3/97	10:59	KLM
Benzo(k)fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	10:59	KLM
Chrysene	<1000	µg/Kg	1000	8270	6/3/97	10:59	KLM
Dibenz(ah)anthracene	<1000	µg/Kg	1000	8270	6/3/97	10:59	KLM
Fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	10:59	KLM
Fluorene	1,300	µg/Kg	1000	8270	6/3/97	10:59	KLM
Indeno(1,2,3-cd)pyrene	<1000	µg/Kg	1000	8270	6/3/97	10:59	KLM
Naphthalene	<1000	µg/Kg	1000	8270	6/3/97	10:59	KLM
Phenanthrene	<1000	µg/Kg	1000	8270	6/3/97	10:59	KLM
Pyrene	<1000	µg/Kg	1000	8270	6/3/97	10:59	KLM

Project: Vernon Briggs

Report #: 27057

Sample: 2006

Report of Laboratory Quality Assurance

Parameter	Blank	Precision	Limit	M.S.	M.S.D.	Limits
Ignitability	>150	0.00	10			
Moisture		0.43	10			
pH		0.34	10			
Specific Conductance		1.05	10			
Petroleum hydrocarbons	<2	46.63	48.4			
Reactivity cyanide	<10	7.54	20	81.8	88	75 - 125
Reactivity sulfide	<10	0.00	10			
Total organic halogen	<0.005	13.54	20	114.7	99.2	75 - 125
TC Arsenic	<0.005	16.26	20	96.0	113	75 - 125
TC Barium	<0.005	1.03	20	106.1	107.2	75 - 125
TC Cadmium	<0.005	7.86	20	102.6	111	75 - 125
TC Chromium	<0.005	3.68	20	91.1	87.8	75 - 125
TC Lead	<0.005	0.83	20	108.5	107.6	75 - 125
TC Mercury	<0.001	0.00	20	99.6	99.6	75 - 125
TC Selenium	<0.005	11.82	20	99.5	112	75 - 125
TC Silver	<0.005	18.60	20	78.0	94	75 - 125
Chloride	<0.05	0.94	20	99.7	100.7	75 - 125
TC 1,1-dichloroethene	<0.005	4.96	25	105.2	100.1	70 - 130
TC 1,2-dichloroethane	<0.005	4.72	25	115.7	121.3	70 - 130
TC 1,4-dichlorobenzene	<0.005	0.35	25	121.8	122.2	70 - 130
TC 2-butanone (MEK)	<0.05	3.50	25	105.1	101.5	70 - 130
TC Benzene	<0.005	5.02	25	94.7	99.6	70 - 130
TC Carbon tetrachloride	<0.005	6.83	25	70.4	75.4	70 - 130
TC Chlorobenzene	<0.005	3.55	25	117.8	122	70 - 130
TC Chloroform	<0.005	17.46	25	111.1	93.3	70 - 130
TC Tetrachloroethene	<0.005	0.16	25	107.1	106.9	70 - 130
TC Trichloroethene	<0.005	5.34	25	95.4	100.6	70 - 130
TC Vinyl chloride	<0.005	6.92	25	109.3	102	70 - 130

Surrogate

Tetrachloro-m-xylene

Dibutylchloroendate

Toluene-d8

Method

8080

8080

8260

Recovery

126

95

104

Limits

74-133

68-125

86-114

Dibromofluoromethane	8260	85.6	76-121
Bromofluorobenzene	8260	92.8	85-117
Bromofluorobenzene	8260	108	85-117
Dibromofluoromethane	8260	79	76-121
Toluene-d8	8260	101	86-114
Phenol-d6	8270	20	10- 94
Nitrobenzene-d5	8270	56	35-114
Tribromophenol	8270	34	10-123
Terphenyl-d14	8270	135	33-141
Fluorophenol	8270	69	21-100
Nitrobenzene-d5	8270	46	35-114
Fluorophenol	8270	78	21-100
Fluorobiphenyl	8270	48	43-116
Phenol-d6	8270	67	10- 94
Fluorobiphenyl	8270	102	43-116
Tribromophenol	8270	11	10-123
Terphenyl-d14	8270	35	33-141

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759

512-471-0140

Report #: 27058**Report of Laboratory Analysis****Project:** Vernon Briggs**Sample:** 2012**Matrix:** soil**Date/Time Taken:** 5/22/97 07:40**Date/Time Rec'd:** 5/23/97 17:40

Parameter	Result	Units	Limit	PQL	Method	Date/Time	Run	By
Ignitability	>150	° F	150	75	1010	5/29/97	19:52	MCK
Moisture	18.6	% dry wt		0.1	ASA	6/6/97	10:20	LBK
pH	9.2				9045	5/30/97	13:00	LBK
Specific Conductance	20700	µS/cm			120.1	6/4/97	9:00	LBK
Petroleum hydrocarbons	5,200	mg/Kg		150	418.1	6/5/97	12:30	LBK
Reactivity cyanide	<10	mg/Kg	250	10	7.3.3.1	5/29/97	23:31	MCK
Reactivity sulfide	<10	mg/Kg	500	10	7.3.3.2	5/29/97	22:26	MCK
Total organic halogen	<1	mg/Kg		1	9020	5/29/97	22:16	MCK
TC Arsenic	<0.005	mg/L	5	0.005	6010	5/29/97	19:45	MCK
TC Barium	9.0	mg/L	100	0.005	6010	5/29/97	19:45	MCK
TC Cadmium	0.0057	mg/L	1	0.005	6010	5/29/97	19:45	MCK
TC Chromium	<0.005	mg/L	5	0.005	6010	5/29/97	19:45	MCK
TC Lead	<0.005	mg/L	5	0.005	6010	5/29/97	19:45	MCK
TC Mercury	<0.001	mg/L	0.2	0.001	7470	5/29/97	16:59	MCK
TC Selenium	<0.005	mg/L	1	0.005	6010	5/29/97	19:45	MCK
TC Silver	<0.005	mg/L	5	0.005	6010	5/29/97	19:45	MCK
Chloride	5,600	mg/Kg		5	300.1	6/4/97	7:48	LBK
TC 1,1-dichloroethene	<0.005	mg/L	0.7	0.25	8260	5/29/97	8:58	KLM
TC 1,2-dichloroethane	<0.005	mg/L	0.5	0.25	8260	5/29/97	8:58	KLM
TC 1,4-dichlorobenzene	<0.005	mg/L	7.5	0.25	8260	5/29/97	8:58	KLM
TC 2-butanone (MEK)	<0.05	mg/L	200	2.5	8260	5/29/97	8:58	KLM
TC Benzene	<0.005	mg/L	0.5	0.25	8260	5/29/97	8:58	KLM
TC Carbon tetrachloride	<0.005	mg/L	0.5	0.25	8260	5/29/97	8:58	KLM
TC Chlorobenzene	<0.005	mg/L	100	0.25	8260	5/29/97	8:58	KLM
TC Chloroform	<0.005	mg/L	6	0.25	8260	5/29/97	8:58	KLM
TC Tetrachloroethene	<0.005	mg/L	0.7	0.25	8260	5/29/97	8:58	KLM
TC Trichloroethene	<0.005	mg/L	0.5	0.25	8260	5/29/97	8:58	KLM

CHEMSOLVE

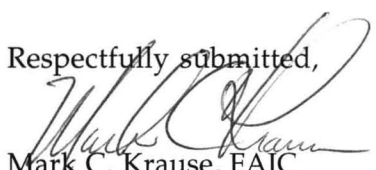
environmental analytical services

11629 Manchaca Road • Austin, Texas 78748 • (512) 280-7680

Parameter	Result	Units	Limit	PQL	Method	Date/Time	Run	By
TC Vinyl chloride	<0.005	mg/L	0.2	0.25	8260	5/29/97	8:58	KLM
TC 2,4-dinitrotoluene	<0.020	mg/L	0.13	0.02	8270	6/2/97	17:43	KLM
TC 2-methyphenol	<0.020	mg/L	200	0.02	8270	6/2/97	17:43	KLM
TC 3&4-methylphenol	<0.020	mg/L	200	0.02	8270	6/2/97	17:43	KLM
TC Hexachlorobenzene	<0.020	mg/L	0.13	0.02	8270	6/2/97	17:43	KLM
TC Hexachlorobutadiene	<0.020	mg/L	0.5	0.02	8270	6/2/97	17:43	KLM
TC Hexachloroethane	<0.020	mg/L	3	0.02	8270	6/2/97	17:43	KLM
TC Nitrobenzene	<0.020	mg/L	2	0.02	8270	6/2/97	17:43	KLM
TC Pentachlorophenol	<0.100	mg/L	100	0.1	8270	6/2/97	17:43	KLM
TC Pyridine	<0.040	mg/L	5	0.04	8270	6/2/97	17:43	KLM

Organic parameters follow this page

Respectfully submitted,


Mark C. Krause, FAIC

Project: Vernon Briggs
Sample: 2012**Report #:** 27058

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
2,4'-DDD	<1	µg/Kg	1	8080	6/2/97	14:48	KLM
2,4'-DDE	<1	µg/Kg	1	8080	6/2/97	14:48	KLM
2,4'-DDT	<1	µg/Kg	1	8080	6/2/97	14:48	KLM
4,4'-DDD	<1	µg/Kg	1	8080	6/2/97	14:48	KLM
4,4'-DDE	<1	µg/Kg	1	8080	6/2/97	14:48	KLM
4,4'-DDT	<1	µg/Kg	1	8080	6/2/97	14:48	KLM
Aldrin	<0.2	µg/Kg	0.2	8080	6/2/97	14:48	KLM
alpha-BHC	<0.5	µg/Kg	0.5	8080	6/2/97	14:48	KLM
alpha-Chlordane	<50	µg/Kg	50	8080	6/2/97	14:48	KLM
Arochlor 1016	<50	µg/Kg	50	8080	6/2/97	14:48	KLM
Arochlor 1221	<50	µg/Kg	50	8080	6/2/97	14:48	KLM
Arochlor 1232	<50	µg/Kg	50	8080	6/2/97	14:48	KLM
Arochlor 1242	<50	µg/Kg	50	8080	6/2/97	14:48	KLM
Arochlor 1248	<50	µg/Kg	50	8080	6/2/97	14:48	KLM
Arochlor 1254	<50	µg/Kg	50	8080	6/2/97	14:48	KLM
Arochlor 1260	<50	µg/Kg	50	8080	6/2/97	14:48	KLM
beta-BHC	<0.5	µg/Kg	0.5	8080	6/2/97	14:48	KLM
delta-BHC	<0.5	µg/Kg	0.5	8080	6/2/97	14:48	KLM
Dieldrin	<0.2	µg/Kg	0.2	8080	6/2/97	14:48	KLM
Endosulfan I	<1	µg/Kg	1	8080	6/2/97	14:48	KLM
Endosulfan II	<1	µg/Kg	1	8080	6/2/97	14:48	KLM
Endosulfan sulfate	<5	µg/Kg	5	8080	6/2/97	14:48	KLM
Endrin	<0.5	µg/Kg	0.5	8080	6/2/97	14:48	KLM
Endrin aldehyde	<5	µg/Kg	5	8080	6/2/97	14:48	KLM
gamma-Chlordane	<50	µg/Kg	50	8080	6/2/97	14:48	KLM
Heptachlor	<0.5	µg/Kg	0.5	8080	6/2/97	14:48	KLM
Heptachlor epoxide	<5	µg/Kg	5	8080	6/2/97	14:48	KLM
Lindane	<0.5	µg/Kg	0.5	8080	6/2/97	14:48	KLM
Methoxychlor	<50	µg/Kg	50	8080	6/2/97	14:48	KLM
Toxaphene	<200	µg/Kg	200	8080	6/2/97	14:48	KLM
1,1,1,2-tetrachloroethane	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
1,1,1-trichloroethane	<250	µg/Kg	250	8260	6/23/97	19:04	KLM

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
1,1,2,2-tetrachloroethane	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
1,1,2-trichloroethane	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
1,1-dichloroethane	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
1,1-dichloroethene	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
1,2,3-trichloropropane	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
1,2,4-trichlorobenzene	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
1,2-dibromoethane	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
1,2-dichlorobenzene	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
1,2-dichloroethane	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
1,2-dichloropropane	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
1,3,5-trichlorobenzene	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
1,3-dichlorobenzene	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
1,4-dichlorobenzene	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
2-butanone	<2500	µg/Kg	2500	8260	6/23/97	19:04	KLM
2-chlorotoluene	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
2-Hexanone	<500	µg/Kg	500	8260	6/23/97	19:04	KLM
4-chlorotoluene	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
4-methyl-2-pentanone	<500	µg/Kg	500	8260	6/23/97	19:04	KLM
Acetone	<2500	µg/Kg	2500	8260	6/23/97	19:04	KLM
Benzene	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
Bromobenzene	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
Bromodichloromethane	<500	µg/Kg	250	8260	6/23/97	19:04	KLM
Bromoform	<500	µg/Kg	500	8260	6/23/97	19:04	KLM
Bromomethane	<500	µg/Kg	500	8260	6/23/97	19:04	KLM
Carbon disulfide	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
Carbon tetrachloride	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
Chlorobenzene	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
Chlorodibromomethane	<500	µg/Kg	250	8260	6/23/97	19:04	KLM
Chloroethane	<500	µg/Kg	500	8260	6/23/97	19:04	KLM
Chloroform	<500	µg/Kg	250	8260	6/23/97	19:04	KLM
Chloromethane	<500	µg/Kg	500	8260	6/23/97	19:04	KLM
cis-1,2-dichloroethene	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
cis-1,3-dichloropropene	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
Dibromomethane	<500	µg/Kg	500	8260	6/23/97	19:04	KLM
Dichlorodifluoromethane	<500	µg/Kg	500	8260	6/23/97	19:04	KLM
Ethylbenzene	310	µg/Kg	250	8260	6/23/97	19:04	KLM
m,p-Xylenes	280	µg/Kg	250	8260	6/23/97	19:04	KLM

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Methylene chloride	<500	µg/Kg	500	8260	6/23/97	19:04	KLM
Naphthalene	2,500	µg/Kg	250	8260	6/23/97	19:04	KLM
o-Xylene	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
Styrene	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
Tetrachloroethene	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
Toluene	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
trans-1,2-dichloroethene	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
trans-1,3-dichloropropene	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
Trichloroethene	<250	µg/Kg	250	8260	6/23/97	19:04	KLM
Trichlorofluoromethane	<500	µg/Kg	500	8260	6/23/97	19:04	KLM
Vinyl chloride	<500	µg/Kg	500	8260	6/23/97	19:04	KLM
Acenaphthene	<1000	µg/Kg	1000	8270	6/3/97	11:48	KLM
Acenaphthylene	<1000	µg/Kg	1000	8270	6/3/97	11:48	KLM
Anthracene	<1000	µg/Kg	1000	8270	6/3/97	11:48	KLM
Benzo(a)anthracene	<1000	µg/Kg	1000	8270	6/3/97	11:48	KLM
Benzo(a)pyrene	<1000	µg/Kg	1000	8270	6/3/97	11:48	KLM
Benzo(b)fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	11:48	KLM
Benzo(ghi)perylene	<1000	µg/Kg	1000	8270	6/3/97	11:48	KLM
Benzo(k)fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	11:48	KLM
Chrysene	<1000	µg/Kg	1000	8270	6/3/97	11:48	KLM
Dibenz(ah)anthracene	<1000	µg/Kg	1000	8270	6/3/97	11:48	KLM
Fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	11:48	KLM
Fluorene	<1000	µg/Kg	1000	8270	6/3/97	11:48	KLM
Indeno(1,2,3-cd)pyrene	<1000	µg/Kg	1000	8270	6/3/97	11:48	KLM
Naphthalene	<1000	µg/Kg	1000	8270	6/3/97	11:48	KLM
Phenanthrene	<1000	µg/Kg	1000	8270	6/3/97	11:48	KLM
Pyrene	<1000	µg/Kg	1000	8270	6/3/97	11:48	KLM

Project: Vernon Briggs
Sample: 2012

Report #: 27058

Report of Laboratory Quality Assurance

Parameter	Blank	Precision	Limit	M.S.	M.S.D.	Limits
Ignitability	>150	0.00	10			
Moisture		0.43	10			
pH		0.34	10			
Specific Conductance		1.05	10			
Petroleum hydrocarbons	<2	46.63	48.4			
Reactivity cyanide	<10	7.54	20	81.8	88	75 - 125
Reactivity sulfide	<10	0.00	10			
Total organic halogen	<0.005	13.54	20	114.7	99.2	75 - 125
TC Arsenic	<0.005	16.26	20	96.0	113	75 - 125
TC Barium	<0.005	1.03	20	106.1	107.2	75 - 125
TC Cadmium	<0.005	7.86	20	102.6	111	75 - 125
TC Chromium	<0.005	3.68	20	91.1	87.8	75 - 125
TC Lead	<0.005	0.83	20	108.5	107.6	75 - 125
TC Mercury	<0.001	0.00	20	99.6	99.6	75 - 125
TC Selenium	<0.005	11.82	20	99.5	112	75 - 125
TC Silver	<0.005	18.60	20	78.0	94	75 - 125
Chloride	<0.05	0.94	20	99.7	100.7	75 - 125
TC 1,1-dichloroethene	<0.005	4.96	25	105.2	100.1	70 - 130
TC 1,2-dichloroethane	<0.005	4.72	25	115.7	121.3	70 - 130
TC 1,4-dichlorobenzene	<0.005	0.35	25	121.8	122.2	70 - 130
TC 2-butanone (MEK)	<0.05	3.50	25	105.1	101.5	70 - 130
TC Benzene	<0.005	5.02	25	94.7	99.6	70 - 130
TC Carbon tetrachloride	<0.005	6.83	25	70.4	75.4	70 - 130
TC Chlorobenzene	<0.005	3.55	25	117.8	122	70 - 130
TC Chloroform	<0.005	17.46	25	111.1	93.3	70 - 130
TC Tetrachloroethene	<0.005	0.16	25	107.1	106.9	70 - 130
TC Trichloroethene	<0.005	5.34	25	95.4	100.6	70 - 130
TC Vinyl chloride	<0.005	6.92	25	109.3	102	70 - 130

Surrogate	Method	Recovery	Limits
Tetrachloro-m-xylene	8080	85	74-133
Dibutylchloroendate	8080	94	68-125
Toluene-d8	8260	108.6	86-114

Dibromofluoromethane	8260	85.9	76-121
Bromofluorobenzene	8260	98.7	85-117
Bromofluorobenzene	8260	112	85-117
Dibromofluoromethane	8260	86	76-121
Toluene-d8	8260	104	86-114
Phenol-d6	8270	15	10- 94
Nitrobenzene-d5	8270	42	35-114
Tribromophenol	8270	20	10-123
Terphenyl-d14	8270	87	33-141
Fluorophenol	8270	23	21-100
Nitrobenzene-d5	8270	36	35-114
Fluorophenol	8270	59	21-100
Fluorobiphenyl	8270	50	43-116
Phenol-d6	8270	51	10- 94
Fluorobiphenyl	8270	88	43-116
Tribromophenol	8270	19	10-123
Terphenyl-d14	8270	42	33-141

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27059

Project: Vernon Briggs

Sample: 2018

Matrix: soil

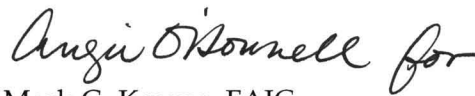
Date/Time Taken: 5/22/97 07:50

Date/Time Rec'd: 5/23/97 17:40

Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Moisture	1.7	% dry wt	0.1	ASA	6/6/97	10:20	LBK
Specific Conductance	6300	µS/cm		120.1	6/4/97	9:00	LBK
Petroleum hydrocarbons	840	mg/Kg	10	418.1	6/5/97	12:30	LBK
Arsenic	5.4	mg/Kg	0.1	6010	5/30/97	9:47	LBK
Barium	1,200	mg/Kg	0.02	6010	5/30/97	9:47	LBK
Cadmium	0.54	mg/Kg	0.1	6010	5/30/97	9:47	LBK
Chromium	190	mg/Kg	0.1	6010	5/30/97	9:47	LBK
Copper	15	mg/Kg	0.1	6010	7/2/97	10:49	LBK
Lead	29	mg/Kg	0.1	6010	5/30/97	9:47	LBK
Mercury	<0.02	mg/Kg	0.02	7470	5/29/97	12:17	LBK
Potassium	1,300	mg/Kg	2	6010	7/3/97	11:45	LBK
Selenium	<0.1	mg/Kg	0.1	6010	5/30/97	9:47	LBK
Silver	<0.1	mg/Kg	0.1	6010	5/30/97	9:47	LBK
Zinc	610	mg/Kg	0.1	6010	7/2/97	10:49	LBK
Ammonia-N	<1	mg/Kg	1	350.2	6/4/97	10:40	PCS
Chloride	1,300	mg/Kg	0.5	300.1	6/4/97	8:00	LBK
Nitrate-N	20	mg/Kg	0.5	300.1	6/4/97	8:00	LBK
ortho-Phosphate	<0.5	mg/Kg	0.5	300.1	6/4/97	8:00	LBK
Total organic nitrogen	328	mg/Kg	0.1		6/30/97	15:00	AFO

Respectfully submitted,


Mark C. Krause, FAIC

Project: Vernon Briggs
Sample: 2018

Report #: 27059

Quality Assurance Data

Parameter	Blank	Precision	Limit	M.S.	M.S.D.	Limits
Moisture		0.43	10			
Specific Conductance		1.05	10			
Petroleum hydrocarbons	<2	46.63	48.4			
Arsenic	<0.005	7.32	20	97.3	104.7	75 - 125
Barium	<0.001	9.73	20	92.6	84	75 - 125
Cadmium	<0.005	2.70	20	97.3	94.7	75 - 125
Chromium	<0.005	13.53	20	93.0	106.5	75 - 125
Copper	<0.005	16.46	20	91.5	76.4	75 - 125
Lead	<0.005	2.50	20	100.9	98.4	75 - 125
Mercury	<0.001	0.40	20	98.7	98.3	75 - 125
Potassium	<0.1	12.40	20	90.0	101.9	75 - 125
Selenium	<0.005	6.77	20	102.2	95.5	75 - 125
Silver	<0.005	5.11	20	87.7	92.3	75 - 125
Zinc	<0.005	2.87	20	107.7	110.8	75 - 125
Ammonia-N	<1	4.00	10	96.0		84 - 115
Chloride	<0.05	0.94	20	99.7	100.7	75 - 125
Nitrate-N	<0.05	1.82	20	91.4	93.1	75 - 125
ortho-Phosphate	<0.05	2.13	20	93.5	95.5	75 - 125

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27060

Project: Vernon Briggs

Sample: 2019

Matrix: soil

Date/Time Taken: 5/22/97 08:00

Date/Time Rec'd: 5/23/97 17:40

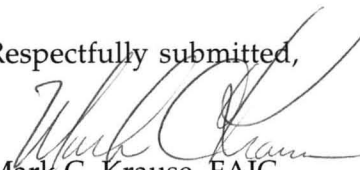
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Specific Conductance	16900	µS/cm		120.1	6/4/97	9:00	LBK
Petroleum hydrocarbons	14,000	mg/Kg	150	418.1	6/5/97	12:30	LBK
Chloride	6,600	mg/Kg	10	300.1	6/4/97	8:15	LBK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Chloride	<0.05	0.94	20	99.7	100.7	75 - 125
Petroleum hydrocarbons	<2	46.63	48.4			
Specific Conductance		1.05	10			

Respectfully submitted,


Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27061

Project: Vernon Briggs

Sample: 2020

Matrix: soil

Date/Time Taken: 5/22/97 08:22

Date/Time Rec'd: 5/23/97 17:40

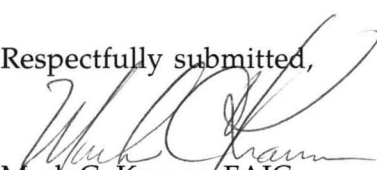
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Specific Conductance	4370	µS/cm		120.1	6/4/97 9:00	LBK
Petroleum hydrocarbons	890	mg/Kg	10	418.1	6/5/97 12:30	LBK
Chloride	820	mg/Kg	0.5	300.1	6/4/97 8:31	LBK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Chloride	<0.05	0.94	20	99.7	100.7	75 - 125
Petroleum hydrocarbons	<2	46.63	48.4			
Specific Conductance		1.05	10			

Respectfully submitted,


Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27062

Project: Vernon Briggs

Sample: 2021

Matrix: soil

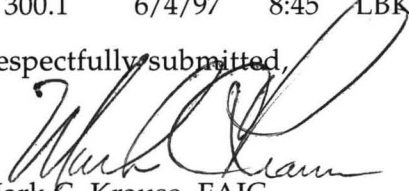
Date/Time Taken: 5/22/97 08:22

Date/Time Rec'd: 5/23/97 17:40

Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Moisture	27.4	% dry wt	0.1	ASA	6/6/97	10:20	LBK
Specific Conductance	20670	µS/cm		120.1	6/4/97	9:00	LBK
Petroleum hydrocarbons	660	mg/Kg	150	418.1	6/5/97	12:30	LBK
Arsenic	5.7	mg/Kg	0.1	6010	5/30/97	9:51	LBK
Barium	1,400	mg/Kg	0.02	6010	5/30/97	9:51	LBK
Cadmium	0.86	mg/Kg	0.1	6010	5/30/97	9:51	LBK
Chromium	230	mg/Kg	0.1	6010	5/30/97	9:51	LBK
Lead	82	mg/Kg	0.1	6010	5/30/97	9:51	LBK
Mercury	<0.02	mg/Kg	0.02	7470	5/29/97	12:17	LBK
Selenium	<0.1	mg/Kg	0.1	6010	5/30/97	9:51	LBK
Silver	<0.1	mg/Kg	0.1	6010	5/30/97	9:51	LBK
Chloride	10,000	mg/Kg	5	300.1	6/4/97	8:45	LBK

Respectfully submitted,


Mark C. Krause, FAIC

Project: Vernon Briggs
Sample: 2021

Report #: 27062

Quality Assurance Data

Parameter	Blank	Precision	Limit	M.S.	M.S.D.	Limits
Moisture		0.43	10			
Specific Conductance		1.05	10			
Petroleum hydrocarbons	<2	46.63	48.4			
Arsenic	<0.005	7.32	20	97.3	104.7	75 - 125
Barium	<0.001	9.73	20	92.6	84	75 - 125
Cadmium	<0.005	2.70	20	97.3	94.7	75 - 125
Chromium	<0.005	13.53	20	93.0	106.5	75 - 125
Lead	<0.005	2.50	20	100.9	98.4	75 - 125
Mercury	<0.001	0.40	20	98.7	98.3	75 - 125
Selenium	<0.005	6.77	20	102.2	95.5	75 - 125
Silver	<0.005	5.11	20	87.7	92.3	75 - 125
Chloride	<0.05	0.94	20	99.7	100.7	75 - 125

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27063

Project: Vernon Briggs

Sample: 2022

Matrix: soil

Date/Time Taken: 5/22/97 08:57

Date/Time Rec'd: 5/23/97 17:40

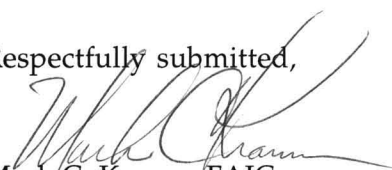
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Specific Conductance	9030	µS/cm		120.1	6/4/97 9:00	LBK
Petroleum hydrocarbons	430	mg/Kg	10	418.1	6/5/97 12:30	LBK
Chloride	4,200	mg/Kg	5	300.1	6/4/97 8:55	LBK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Chloride	<0.05	0.94	20	99.7	100.7	75 - 125
Petroleum hydrocarbons	<2	46.63	48.4			
Specific Conductance		1.05	10			

Respectfully submitted,

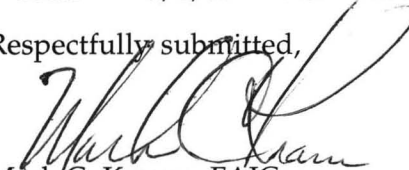

Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27064**Project:** Vernon Briggs**Sample:** 2023**Matrix:** soil**Date/Time Taken:** 5/22/97 08:57**Date/Time Rec'd:** 5/23/97 17:40**Report of Laboratory Analysis**

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Moisture	22.7	% dry wt	0.1	ASA	6/6/97	10:20	LBK
Specific Conductance	40500	µS/cm		120.1	6/4/97	9:00	LBK
Petroleum hydrocarbons	6,600	mg/Kg	150	418.1	6/5/97	12:30	LBK
Arsenic	6.4	mg/Kg	0.1	6010	5/30/97	9:56	LBK
Barium	1,500	mg/Kg	0.02	6010	5/30/97	9:56	LBK
Cadmium	0.53	mg/Kg	0.1	6010	5/30/97	9:56	LBK
Chromium	190	mg/Kg	0.1	6010	5/30/97	9:56	LBK
Lead	36	mg/Kg	0.1	6010	5/30/97	9:56	LBK
Mercury	<0.02	mg/Kg	0.02	7470	5/29/97	12:17	LBK
Selenium	<0.1	mg/Kg	0.1	6010	5/30/97	9:56	LBK
Silver	<0.1	mg/Kg	0.1	6010	5/30/97	9:56	LBK
Chloride	10,000	mg/Kg	5	300.1	6/4/97	9:07	LBK

Respectfully submitted,


Mark C. Krause, FAIC

Project: Vernon Briggs
Sample: 2023

Report #: 27064

Quality Assurance Data

Parameter	Blank	Precision	Limit	M.S.	M.S.D.	Limits
Moisture		0.43	10			
Specific Conductance		1.05	10			
Petroleum hydrocarbons	<2	46.63	48.4			
Arsenic	<0.005	7.32	20	97.3	104.7	75 - 125
Barium	<0.001	9.73	20	92.6	84	75 - 125
Cadmium	<0.005	2.70	20	97.3	94.7	75 - 125
Chromium	<0.005	13.53	20	93.0	106.5	75 - 125
Lead	<0.005	2.50	20	100.9	98.4	75 - 125
Mercury	<0.001	0.40	20	98.7	98.3	75 - 125
Selenium	<0.005	6.77	20	102.2	95.5	75 - 125
Silver	<0.005	5.11	20	87.7	92.3	75 - 125
Chloride	<0.05	0.94	20	99.7	100.7	75 - 125

Monday, June 9, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

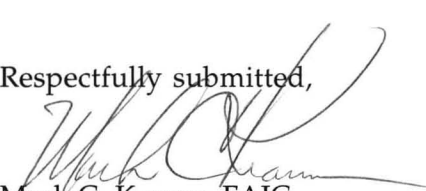
Report #: 27065**Project:** Vernon Briggs**Sample:** 2024**Matrix:** soil**Date/Time Taken:** 5/22/97 10:00**Date/Time Rec'd:** 5/23/97 17:40**Report of Laboratory Analysis**

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Specific Conductance	9000	µS/cm		120.1	6/4/97 9:00	LBK
Petroleum hydrocarbons	80	mg/Kg	10	418.1	6/5/97 12:30	LBK
Chloride	2,700	mg/Kg	5	300.1	6/4/97 9:14	LBK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Chloride	<0.05	0.94	20	99.7	100.7	75 - 125
Petroleum hydrocarbons	<2	46.63	48.4			
Specific Conductance		1.05	10			

Respectfully submitted,

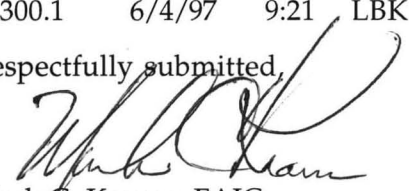

Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27066**Project:** Vernon Briggs**Sample:** 2025**Matrix:** soil**Date/Time Taken:** 5/22/97 10:00**Date/Time Rec'd:** 5/23/97 17:40**Report of Laboratory Analysis**

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Moisture	16.3	% dry wt	0.1	ASA	6/6/97	10:20	LBK
Specific Conductance	18240	µS/cm		120.1	6/4/97	9:00	LBK
Petroleum hydrocarbons	4,600	mg/Kg	150	418.1	6/5/97	12:30	LBK
Arsenic	5.7	mg/Kg	0.1	6010	5/30/97	10:00	LBK
Barium	1,200	mg/Kg	0.02	6010	5/30/97	10:00	LBK
Cadmium	0.67	mg/Kg	0.1	6010	5/30/97	10:00	LBK
Chromium	270	mg/Kg	0.1	6010	5/30/97	10:00	LBK
Lead	64	mg/Kg	0.1	6010	5/30/97	10:00	LBK
Mercury	<0.02	mg/Kg	0.02	7470	5/29/97	12:17	LBK
Selenium	<0.1	mg/Kg	0.1	6010	5/30/97	10:00	LBK
Silver	<0.1	mg/Kg	0.1	6010	5/30/97	10:00	LBK
Chloride	6,000	mg/Kg	5	300.1	6/4/97	9:21	LBK

Respectfully submitted,


Mark C. Krause, FAIC

Project: Vernon Briggs
Sample: 2025

Report #: 27066

Quality Assurance Data

Parameter	Blank	Precision	Limit	M.S.	M.S.D.	Limits
Moisture		0.43	10			
Specific Conductance		1.05	10			
Petroleum hydrocarbons	<2	46.63	48.4			
Arsenic	<0.005	7.32	20	97.3	104.7	75 - 125
Barium	<0.001	9.73	20	92.6	84	75 - 125
Cadmium	<0.005	2.70	20	97.3	94.7	75 - 125
Chromium	<0.005	13.53	20	93.0	106.5	75 - 125
Lead	<0.005	2.50	20	100.9	98.4	75 - 125
Mercury	<0.001	0.40	20	98.7	98.3	75 - 125
Selenium	<0.005	6.77	20	102.2	95.5	75 - 125
Silver	<0.005	5.11	20	87.7	92.3	75 - 125
Chloride	<0.05	0.22	20	105.5	105.7	75 - 125

Monday, June 9, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

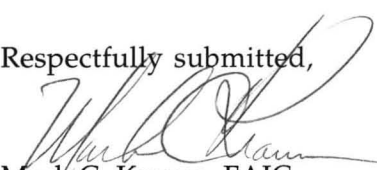
Report #: 27067**Project:** Vernon Briggs**Sample:** 2026**Matrix:** soil**Date/Time Taken:** 5/22/97 10:21**Date/Time Rec'd:** 5/23/97 17:40**Report of Laboratory Analysis**

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Specific Conductance	7260	µS/cm		120.1	6/4/97 12:00	LBK
Petroleum hydrocarbons	1,900	mg/Kg	150	418.1	6/5/97 16:30	LBK
Chloride	1,600	mg/Kg	5	300.1	6/4/97 9:33	LBK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Chloride	<0.05	0.94	20	99.7	100.7	75 - 125
Petroleum hydrocarbons	<2	46.29	48.4			
Specific Conductance		2.04	10			

Respectfully submitted,


Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27068

Project: Vernon Briggs

Sample: 2027

Matrix: soil

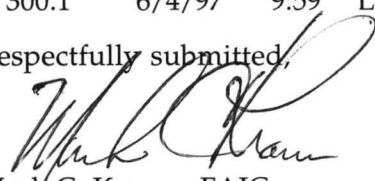
Date/Time Taken: 5/22/97 10:21

Date/Time Rec'd: 5/23/97 17:40

Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Moisture	47.2	% dry wt	0.1	ASA	6/6/97	10:20	LBK
Specific Conductance	15150	µS/cm		120.1	6/4/97	12:00	LBK
Petroleum hydrocarbons	3,000	mg/Kg	150	418.1	6/5/97	16:30	LBK
Arsenic	6.2	mg/Kg	0.1	6010	5/30/97	10:05	LBK
Barium	1,300	mg/Kg	0.02	6010	5/30/97	10:05	LBK
Cadmium	0.59	mg/Kg	0.1	6010	5/30/97	10:05	LBK
Chromium	200	mg/Kg	0.1	6010	5/30/97	10:05	LBK
Lead	50	mg/Kg	0.1	6010	5/30/97	10:05	LBK
Mercury	<0.02	mg/Kg	0.02	7470	5/29/97	12:17	LBK
Selenium	<0.1	mg/Kg	0.1	6010	5/30/97	10:05	LBK
Silver	<0.1	mg/Kg	0.1	6010	5/30/97	10:05	LBK
Chloride	4,300	mg/Kg	5	300.1	6/4/97	9:59	LBK

Respectfully submitted,


Mark C. Krause, FAIC

Project: Vernon Briggs
Sample: 2027

Report #: 27068

Quality Assurance Data

Parameter	Blank	Precision	Limit	M.S.	M.S.D.	Limits
Moisture		0.43	10			
Specific Conductance		2.04	10			
Petroleum hydrocarbons	<2	46.29	48.4			
Arsenic	<0.005	7.32	20	97.3	104.7	75 - 125
Barium	<0.001	9.73	20	92.6	84	75 - 125
Cadmium	<0.005	2.70	20	97.3	94.7	75 - 125
Chromium	<0.005	13.53	20	93.0	106.5	75 - 125
Lead	<0.005	2.50	20	100.9	98.4	75 - 125
Mercury	<0.001	0.40	20	98.7	98.3	75 - 125
Selenium	<0.005	6.77	20	102.2	95.5	75 - 125
Silver	<0.005	5.11	20	87.7	92.3	75 - 125
Chloride	<0.05	0.22	20	105.5	105.7	75 - 125

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27069

Project: Vernon Briggs

Sample: 2028

Matrix: soil

Date/Time Taken: 5/22/97 11:01

Date/Time Rec'd: 5/23/97 17:40

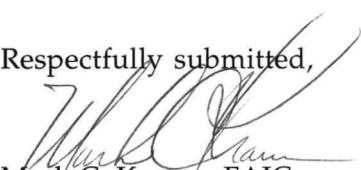
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Specific Conductance	4530	µS/cm		120.1	6/4/97 12:00	LBK
Petroleum hydrocarbons	540	mg/Kg	10	418.1	6/5/97 16:30	LBK
Chloride	400	mg/Kg	0.5	300.1	6/4/97 10:22	LBK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Chloride	<0.05	0.22	20	105.5	105.7	75 - 125
Petroleum hydrocarbons	<2	46.29	48.4			
Specific Conductance		2.04	10			

Respectfully submitted,

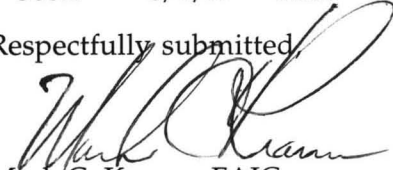

Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27070**Project:** Vernon Briggs**Sample:** 2029**Matrix:** soil**Date/Time Taken:** 5/22/97 11:01**Date/Time Rec'd:** 5/23/97 17:40**Report of Laboratory Analysis**

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Moisture	39	% dry wt	0.1	ASA	6/6/97	10:20	LBK
Specific Conductance	15750	µS/cm		120.1	6/4/97	12:00	LBK
Petroleum hydrocarbons	6,200	mg/Kg	150	418.1	6/5/97	16:30	LBK
Arsenic	7.7	mg/Kg	0.1	6010	5/30/97	10:09	LBK
Barium	790	mg/Kg	0.02	6010	5/30/97	10:09	LBK
Cadmium	0.86	mg/Kg	0.1	6010	5/30/97	10:09	LBK
Chromium	250	mg/Kg	0.1	6010	5/30/97	10:09	LBK
Lead	61	mg/Kg	0.1	6010	5/30/97	10:09	LBK
Mercury	<0.02	mg/Kg	0.02	7470	5/29/97	12:17	LBK
Selenium	<0.1	mg/Kg	0.1	6010	5/30/97	10:09	LBK
Silver	<0.1	mg/Kg	0.1	6010	5/30/97	10:09	LBK
Chloride	4,500	mg/Kg	5	300.1	6/4/97	10:35	LBK

Respectfully submitted,


Mark/C. Krause, FAIC

Project: Vernon Briggs
Sample: 2029

Report #: 27070

Quality Assurance Data

Parameter	Blank	Precision	Limit	M.S.	M.S.D.	Limits
Moisture		0.43	10			
Specific Conductance		2.04	10			
Petroleum hydrocarbons	<2	46.29	48.4			
Arsenic	<0.005	7.32	20	97.3	104.7	75 - 125
Barium	<0.001	9.73	20	92.6	84	75 - 125
Cadmium	<0.005	2.70	20	97.3	94.7	75 - 125
Chromium	<0.005	13.53	20	93.0	106.5	75 - 125
Lead	<0.005	2.50	20	100.9	98.4	75 - 125
Mercury	<0.001	0.40	20	98.7	98.3	75 - 125
Selenium	<0.005	6.77	20	102.2	95.5	75 - 125
Silver	<0.005	5.11	20	87.7	92.3	75 - 125
Chloride	<0.05	0.22	20	105.5	105.7	75 - 125

Monday, June 9, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

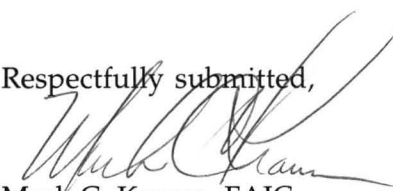
Report #: 27071**Project:** Vernon Briggs**Sample:** 2030**Matrix:** soil**Date/Time Taken:** 5/22/97 11:34**Date/Time Rec'd:** 5/23/97 17:40**Report of Laboratory Analysis**

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Specific Conductance	13400	µS/cm		120.1	6/4/97 12:00	LBK
Petroleum hydrocarbons	<10	mg/Kg	10	418.1	6/5/97 16:30	LBK
Chloride	4,000	mg/Kg	5	300.1	6/4/97 10:54	LBK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Chloride	<0.05	0.22	20	105.5	105.7	75 - 125
Petroleum hydrocarbons	<2	46.29	48.4			
Specific Conductance		2.04	10			

Respectfully submitted,

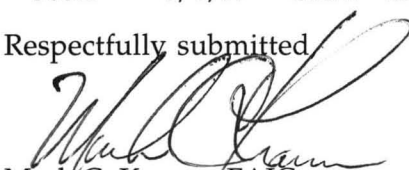

Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27072**Project:** Vernon Briggs**Sample:** 2031**Matrix:** soil**Date/Time Taken:** 5/22/97 11:34**Date/Time Rec'd:** 5/23/97 17:40**Report of Laboratory Analysis**

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Moisture	28.4	% dry wt	0.1	ASA	6/6/97	10:20	LBK
Specific Conductance	19860	µS/cm		120.1	6/4/97	12:00	LBK
Petroleum hydrocarbons	3,200	mg/Kg	150	418.1	6/5/97	16:30	LBK
Arsenic	3.7	mg/Kg	0.1	6010	5/30/97	10:13	LBK
Barium	1,500	mg/Kg	0.02	6010	5/30/97	10:13	LBK
Cadmium	0.45	mg/Kg	0.1	6010	5/30/97	10:13	LBK
Chromium	190	mg/Kg	0.1	6010	5/30/97	10:13	LBK
Lead	34	mg/Kg	0.1	6010	5/30/97	10:13	LBK
Mercury	<0.02	mg/Kg	0.02	7470	5/29/97	12:17	LBK
Selenium	<0.1	mg/Kg	0.1	6010	5/30/97	10:13	LBK
Silver	<0.1	mg/Kg	0.1	6010	5/30/97	10:13	LBK
Chloride	7,000	mg/Kg	5	300.1	6/4/97	11:04	LBK

Respectfully submitted


Mark C. Krause, FAIC

Project: Vernon Briggs
Sample: 2031

Report #: 27072

Quality Assurance Data

Parameter	Blank	Precision	Limit	M.S.	M.S.D.	Limits
Moisture		0.43	10			
Specific Conductance		2.04	10			
Petroleum hydrocarbons	<2	46.29	48.4			
Arsenic	<0.005	7.32	20	97.3	104.7	75 - 125
Barium	<0.001	9.73	20	92.6	84	75 - 125
Cadmium	<0.005	2.70	20	97.3	94.7	75 - 125
Chromium	<0.005	13.53	20	93.0	106.5	75 - 125
Lead	<0.005	2.50	20	100.9	98.4	75 - 125
Mercury	<0.001	0.40	20	98.7	98.3	75 - 125
Selenium	<0.005	6.77	20	102.2	95.5	75 - 125
Silver	<0.005	5.11	20	87.7	92.3	75 - 125
Chloride	<0.05	0.22	20	105.5	105.7	75 - 125

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759

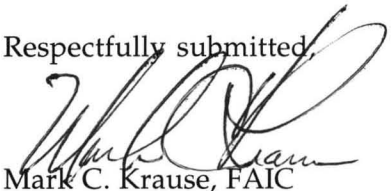
512-471-0140

Report #: 27073**Report of Laboratory Analysis****Project:** Vernon Briggs**Sample:** 2032**Matrix:** soil**Date/Time Taken:** 5/22/97 13:54**Date/Time Rec'd:** 5/23/97 17:40

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Moisture	1.5	% dry wt	0.1	ASA	6/6/97	10:20	LBK
Specific Conductance	3110	µS/cm		120.1	6/4/97	12:00	LBK
Petroleum hydrocarbons	8,100	mg/Kg	150	418.1	6/5/97	16:30	LBK
Arsenic	4.8	mg/Kg	0.1	6010	5/30/97	10:18	LBK
Barium	1,400	mg/Kg	0.02	6010	5/30/97	10:18	LBK
Cadmium	0.68	mg/Kg	0.1	6010	5/30/97	10:18	LBK
Chromium	450	mg/Kg	0.1	6010	5/30/97	10:18	LBK
Lead	47	mg/Kg	0.1	6010	5/30/97	10:18	LBK
Mercury	<0.02	mg/Kg	0.02	7470	5/29/97	12:17	LBK
Selenium	<0.1	mg/Kg	0.1	6010	5/30/97	10:18	LBK
Silver	<0.1	mg/Kg	0.1	6010	5/30/97	10:18	LBK
Chloride	89	mg/Kg	0.5	300.1	6/4/97	11:41	LBK

Organic parameters follow this page

Respectfully submitted,


Mark C. Krause, FAIC

Project: Vernon Briggs**Report #:** 27073**Sample:** 2032

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Acenaphthene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Acenaphthylene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Anthracene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Benzo(a)anthracene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Benzo(a)pyrene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Benzo(b)fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Benzo(ghi)perylene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Benzo(k)fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Chrysene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Dibenz(ah)anthracene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Fluorene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Indeno(1,2,3-cd)pyrene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Naphthalene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Phenanthrene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Pyrene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM

Project: Vernon Briggs**Report #:** 27073**Sample:** 2032**Report of Laboratory Quality Assurance**

Parameter	Blank	Precision	Limit	M.S.	M.S.D.	Limits
Moisture		0.43	10			
Specific Conductance		2.04	10			
Petroleum hydrocarbons	<2	46.29	48.4			
Arsenic	<0.005	7.32	20	97.3	104.7	75 - 125
Barium	<0.001	9.73	20	92.6	84	75 - 125
Cadmium	<0.005	2.70	20	97.3	94.7	75 - 125
Chromium	<0.005	13.53	20	93.0	106.5	75 - 125
Lead	<0.005	2.50	20	100.9	98.4	75 - 125
Mercury	<0.001	0.40	20	98.7	98.3	75 - 125
Selenium	<0.005	6.77	20	102.2	95.5	75 - 125
Silver	<0.005	5.11	20	87.7	92.3	75 - 125
Chloride	<0.05	0.22	20	105.5	105.7	75 - 125

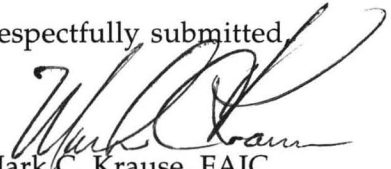
Surrogate	Method	Recovery	Limits
Phenol-d6	8270	51	10- 94
Terphenyl-d14	8270	38	33-141
Tribromophenol	8270	12	10-123
Fluorobiphenyl	8270	53	43-116
Fluorophenol	8270	57	21-100
Nitrobenzene-d5	8270	36	35-114

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27074**Project:** Vernon Briggs**Sample:** 2033**Matrix:** soil**Date/Time Taken:** 5/22/97 14:32**Date/Time Rec'd:** 5/23/97 17:40**Report of Laboratory Analysis**

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Moisture	22.9	% dry wt	0.1	ASA	6/6/97	10:20	LBK
Specific Conductance	9900	µS/cm		120.1	6/4/97	12:00	LBK
Petroleum hydrocarbons	630	mg/Kg	10	418.1	6/5/97	16:30	LBK
Arsenic	6.0	mg/Kg	0.1	6010	5/30/97	10:22	LBK
Barium	1,500	mg/Kg	0.02	6010	5/30/97	10:22	LBK
Cadmium	0.53	mg/Kg	0.1	6010	5/30/97	10:22	LBK
Chromium	390	mg/Kg	0.1	6010	5/30/97	10:22	LBK
Lead	49	mg/Kg	0.1	6010	5/30/97	10:22	LBK
Mercury	<0.02	mg/Kg	0.02	7470	5/29/97	12:17	LBK
Selenium	<0.1	mg/Kg	0.1	6010	5/30/97	10:22	LBK
Silver	<0.1	mg/Kg	0.1	6010	5/30/97	10:22	LBK
Chloride	130	mg/Kg	0.5	300.1	6/4/97	11:48	LBK

Respectfully submitted,


Mark C. Krause, FAIC

Project: Vernon Briggs
Sample: 2033

Report #: 27074

Quality Assurance Data

Parameter	Blank	Precision	Limit	M.S.	M.S.D.	Limits
Moisture		6.77	10			
Specific Conductance		2.04	10			
Petroleum hydrocarbons	<2	46.29	48.4			
Arsenic	<0.005	7.32	20	97.3	104.7	75 - 125
Barium	<0.001	9.73	20	92.6	84	75 - 125
Cadmium	<0.005	2.70	20	97.3	94.7	75 - 125
Chromium	<0.005	13.53	20	93.0	106.5	75 - 125
Lead	<0.005	2.50	20	100.9	98.4	75 - 125
Mercury	<0.001	0.40	20	98.7	98.3	75 - 125
Selenium	<0.005	6.77	20	102.2	95.5	75 - 125
Silver	<0.005	5.11	20	87.7	92.3	75 - 125
Chloride	<0.05	0.22	20	105.5	105.7	75 - 125

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759

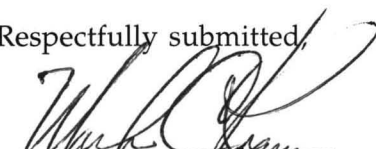
512-471-0140

Report #: 27075**Report of Laboratory Analysis****Project:** Vernon Briggs**Sample:** 2034**Matrix:** soil**Date/Time Taken:** 5/22/97 14:44**Date/Time Rec'd:** 5/23/97 17:40

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Moisture	20.9	% dry wt	0.1	ASA	6/6/97	10:20	LBK
Specific Conductance	4020	µS/cm		120.1	6/4/97	12:00	LBK
Petroleum hydrocarbons	2,100	mg/Kg	150	418.1	6/5/97	16:30	LBK
Arsenic	3.9	mg/Kg	0.1	6010	5/30/97	10:27	LBK
Barium	1,200	mg/Kg	0.02	6010	5/30/97	10:27	LBK
Cadmium	0.39	mg/Kg	0.1	6010	5/30/97	10:27	LBK
Chromium	230	mg/Kg	0.1	6010	5/30/97	10:27	LBK
Lead	40	mg/Kg	0.1	6010	5/30/97	10:27	LBK
Mercury	<0.02	mg/Kg	0.02	7470	5/29/97	12:17	LBK
Selenium	<0.1	mg/Kg	0.1	6010	5/30/97	10:27	LBK
Silver	<0.1	mg/Kg	0.1	6010	5/30/97	10:27	LBK
Chloride	580	mg/Kg	0.5	300.1	6/4/97	11:55	LBK

Organic parameters follow this page

Respectfully submitted,


Mark C. Krause, FAIC

Project: Vernon Briggs
Sample: 2034**Report #:** 27075

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Acenaphthene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Acenaphthylene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Anthracene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Benzo(a)anthracene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Benzo(a)pyrene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Benzo(b)fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Benzo(ghi)perylene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Benzo(k)fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
bis(2-ethylhexyl)phthalate	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Chrysene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Di-n-octylphthalate	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Dibenz(ah)anthracene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Fluorene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Indeno(1,2,3-cd)pyrene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Naphthalene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Phenanthrene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Pyrene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM

Project: Vernon Briggs**Report #:** 27075**Sample:** 2034**Report of Laboratory Quality Assurance**

Parameter	Blank	Precision	Limit	M.S.	M.S.D.	Limits
Moisture		6.77	10			
Specific Conductance		2.04	10			
Petroleum hydrocarbons	<2	46.29	48.4			
Arsenic	<0.005	7.32	20	97.3	104.7	75 - 125
Barium	<0.001	9.73	20	92.6	84	75 - 125
Cadmium	<0.005	2.70	20	97.3	94.7	75 - 125
Chromium	<0.005	13.53	20	93.0	106.5	75 - 125
Lead	<0.005	2.50	20	100.9	98.4	75 - 125
Mercury	<0.001	0.40	20	98.7	98.3	75 - 125
Selenium	<0.005	6.77	20	102.2	95.5	75 - 125
Silver	<0.005	5.11	20	87.7	92.3	75 - 125
Chloride	<0.05	0.22	20	105.5	105.7	75 - 125

Surrogate	Method	Recovery	Limits
Phenol-d6	8270	46	10- 94
Terphenyl-d14	8270	38	33-141
Tribromophenol	8270	18	10-123
Fluorobiphenyl	8270	45	43-116
Fluorophenol	8270	51	21-100
Nitrobenzene-d5	8270	40	35-114

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759

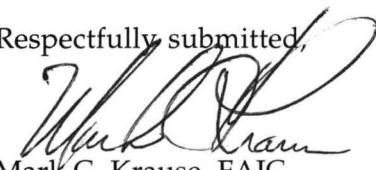
512-471-0140

Report #: 27076**Report of Laboratory Analysis****Project:** Vernon Briggs**Sample:** 2035**Matrix:** soil**Date/Time Taken:** 5/22/97 15:50**Date/Time Rec'd:** 5/23/97 17:40

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Moisture	6.4	% dry wt	0.1	ASA	6/6/97	10:20	LBK
Specific Conductance	2780	µS/cm		120.1	6/4/97	12:00	LBK
Petroleum hydrocarbons	680	mg/Kg	10	418.1	6/5/97	16:30	LBK
Arsenic	4.0	mg/Kg	0.1	6010	5/30/97	10:49	LBK
Barium	1,800	mg/Kg	0.02	6010	5/30/97	10:49	LBK
Cadmium	0.26	mg/Kg	0.1	6010	5/30/97	10:49	LBK
Chromium	240	mg/Kg	0.1	6010	5/30/97	10:49	LBK
Lead	27	mg/Kg	0.1	6010	5/30/97	10:49	LBK
Mercury	<0.02	mg/Kg	0.02	7470	5/29/97	13:42	LBK
Selenium	<0.1	mg/Kg	0.1	6010	5/30/97	10:49	LBK
Silver	<0.1	mg/Kg	0.1	6010	5/30/97	10:49	LBK
Chloride	230	mg/Kg	0.5	300.1	6/4/97	12:08	LBK

Organic parameters follow this page

Respectfully submitted,


Mark C. Krause, FAIC

Project: Vernon Briggs
Sample: 2035**Report #:** 27076

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Acenaphthene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Acenaphthylene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Anthracene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Benzo(a)anthracene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Benzo(a)pyrene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Benzo(b)fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Benzo(ghi)perylene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Benzo(k)fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Chrysene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Dibenz(ah)anthracene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Fluorene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Indeno(1,2,3-cd)pyrene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Naphthalene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Phenanthrene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Pyrene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM

Project: Vernon Briggs**Report #:** 27076**Sample:** 2035**Report of Laboratory Quality Assurance**

Parameter	Blank	Precision	Limit	M.S.	M.S.D.	Limits
Moisture		6.77	10			
Specific Conductance		2.04	10			
Petroleum hydrocarbons	<2	46.29	48.4			
Arsenic	<0.005	1.30	20	99.9	98.6	75 - 125
Barium	<0.001	13.31	20	79.2	90.5	75 - 125
Cadmium	<0.005	2.36	20	100.2	102.6	75 - 125
Chromium	<0.005	0.58	20	85.1	84.6	75 - 125
Lead	<0.005	5.74	20	104.9	111.1	75 - 125
Mercury	<0.001	0.59	20	84.7	84.2	75 - 125
Selenium	<0.005	4.99	20	108.7	103.4	75 - 125
Silver	<0.005	8.48	20	91.4	99.5	75 - 125
Chloride	<0.05	0.22	20	105.5	105.7	75 - 125

Surrogate	Method	Recovery	Limits
Phenol-d6	8270	53	10- 94
Terphenyl-d14	8270	41	33-141
Tribromophenol	8270	19	10-123
Fluorobiphenyl	8270	45	43-116
Fluorophenol	8270	58	21-100
Nitrobenzene-d5	8270	41	35-114

APPENDIX B—Soils Data

ChemSOLVE

11629 Manchaca Road

Austin, Texas 78748

Phone: 512-280-7680 FAX: 512-280-7651

Email: Chemsolve@aol.com

WWW: <http://www.eden.com/~chemsol/>

REPORT TO:	BILL TO:
CONTACT JERI SULLIVAN	
COMPANY BEG - UT AUSTIN	
ADDRESS	
PHONE 471 6285 FAX 471 0140	

CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD

Page ____ of ____

Project Name: VERNON BRIGGS

Project No.:

Turnaround: ASAP

Analytical Request:

Sample ID	Date	Time	No. of Cont.	Matrix	TPH + Chloride	RCRA8	E.COND.	MOISTURE / DENSITY	PAH'S (8270)									Lab Number	Comments
2027	5/22/97	1021	1	SOIL	X	X	X	X											5300 W200
2028		1101	1	SOIL	X		X												Surface 5300 W100
2029		1101	1	SOIL	X	X	X	X											5300 W100
2030		1134	1	SOIL	X		X												Surface 5475 W200
2031		1134	1	SOIL	X	X	X	X											5475 W200
2032		1354	1	SOIL	X	X	X	X	X										5600 W200
2033		1432	1	SOIL	X	X	X	X											5600 W300
2034		1444	1	SOIL	X	X	X	X	X										5600 W400
2035		1550	1	SOIL	X	X	X	X	X										STA 27

Relinquished By	Date	Time	Received By	Carrier	Date	Time

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

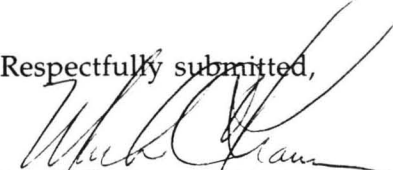
Report #: 27071**Project:** Vernon Briggs**Sample:** 2030**Matrix:** soil**Date/Time Taken:** 5/22/97 11:34**Date/Time Rec'd:** 5/23/97 17:40**Report of Laboratory Analysis**

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Specific Conductance	13400	µS/cm		120.1	6/4/97 12:00	LBK
Petroleum hydrocarbons	<10	mg/Kg	10	418.1	6/5/97 16:30	LBK
Chloride	4,000	mg/Kg	5	300.1	6/4/97 10:54	LBK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Chloride	<0.05	0.22	20	105.5	105.7	75 - 125
Petroleum hydrocarbons	<2	46.29	48.4			
Specific Conductance		2.04	10			

Respectfully submitted,

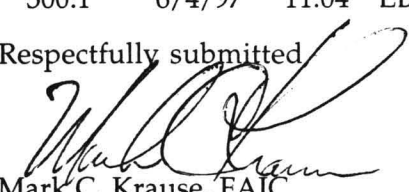

Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27072**Project:** Vernon Briggs**Sample:** 2031**Matrix:** soil**Date/Time Taken:** 5/22/97 11:34**Date/Time Rec'd:** 5/23/97 17:40**Report of Laboratory Analysis**

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Moisture	28.4	% dry wt	0.1	ASA	6/6/97	10:20	LBK
Specific Conductance	19860	μS/cm		120.1	6/4/97	12:00	LBK
Petroleum hydrocarbons	3,200	mg/Kg	150	418.1	6/5/97	16:30	LBK
Arsenic	3.7	mg/Kg	0.1	6010	5/30/97	10:13	LBK
Barium	1,500	mg/Kg	0.02	6010	5/30/97	10:13	LBK
Cadmium	0.45	mg/Kg	0.1	6010	5/30/97	10:13	LBK
Chromium	190	mg/Kg	0.1	6010	5/30/97	10:13	LBK
Lead	34	mg/Kg	0.1	6010	5/30/97	10:13	LBK
Mercury	<0.02	mg/Kg	0.02	7470	5/29/97	12:17	LBK
Selenium	<0.1	mg/Kg	0.1	6010	5/30/97	10:13	LBK
Silver	<0.1	mg/Kg	0.1	6010	5/30/97	10:13	LBK
Chloride	7,000	mg/Kg	5	300.1	6/4/97	11:04	LBK

Respectfully submitted


Mark C. Krause, FAIC

Project: Vernon Briggs**Sample:** 2031**Report #:** 27072**Quality Assurance Data**

Parameter	Blank	Precision	Limit	M.S.	M.S.D.	Limits
Moisture		0.43	10			
Specific Conductance		2.04	10			
Petroleum hydrocarbons	<2	46.29	48.4			
Arsenic	<0.005	7.32	20	97.3	104.7	75 - 125
Barium	<0.001	9.73	20	92.6	84	75 - 125
Cadmium	<0.005	2.70	20	97.3	94.7	75 - 125
Chromium	<0.005	13.53	20	93.0	106.5	75 - 125
Lead	<0.005	2.50	20	100.9	98.4	75 - 125
Mercury	<0.001	0.40	20	98.7	98.3	75 - 125
Selenium	<0.005	6.77	20	102.2	95.5	75 - 125
Silver	<0.005	5.11	20	87.7	92.3	75 - 125
Chloride	<0.05	0.22	20	105.5	105.7	75 - 125

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759

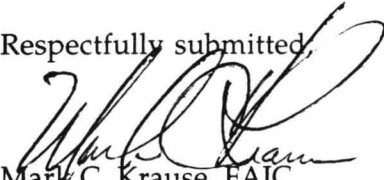
512-471-0140

Report #: 27073**Report of Laboratory Analysis****Project:** Vernon Briggs**Sample:** 2032**Matrix:** soil**Date/Time Taken:** 5/22/97 13:54**Date/Time Rec'd:** 5/23/97 17:40

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Moisture	1.5	% dry wt	0.1	ASA	6/6/97	10:20	LBK
Specific Conductance	3110	µS/cm		120.1	6/4/97	12:00	LBK
Petroleum hydrocarbons	8,100	mg/Kg	150	418.1	6/5/97	16:30	LBK
Arsenic	4.8	mg/Kg	0.1	6010	5/30/97	10:18	LBK
Barium	1,400	mg/Kg	0.02	6010	5/30/97	10:18	LBK
Cadmium	0.68	mg/Kg	0.1	6010	5/30/97	10:18	LBK
Chromium	450	mg/Kg	0.1	6010	5/30/97	10:18	LBK
Lead	47	mg/Kg	0.1	6010	5/30/97	10:18	LBK
Mercury	<0.02	mg/Kg	0.02	7470	5/29/97	12:17	LBK
Selenium	<0.1	mg/Kg	0.1	6010	5/30/97	10:18	LBK
Silver	<0.1	mg/Kg	0.1	6010	5/30/97	10:18	LBK
Chloride	89	mg/Kg	0.5	300.1	6/4/97	11:41	LBK

Organic parameters follow this page

Respectfully submitted,


Mark C. Krause, FAIC

Project: Vernon Briggs**Report #:** 27073**Sample:** 2032**Report of Laboratory Quality Assurance**

Parameter	Blank	Precision	Limit	M.S.	M.S.D.	Limits
Moisture		0.43	10			
Specific Conductance		2.04	10			
Petroleum hydrocarbons	<2	46.29	48.4			
Arsenic	<0.005	7.32	20	97.3	104.7	75 - 125
Barium	<0.001	9.73	20	92.6	84	75 - 125
Cadmium	<0.005	2.70	20	97.3	94.7	75 - 125
Chromium	<0.005	13.53	20	93.0	106.5	75 - 125
Lead	<0.005	2.50	20	100.9	98.4	75 - 125
Mercury	<0.001	0.40	20	98.7	98.3	75 - 125
Selenium	<0.005	6.77	20	102.2	95.5	75 - 125
Silver	<0.005	5.11	20	87.7	92.3	75 - 125
Chloride	<0.05	0.22	20	105.5	105.7	75 - 125

Surrogate	Method	Recovery	Limits
Phenol-d6	8270	51	10- 94
Terphenyl-d14	8270	38	33-141
Tribromophenol	8270	12	10-123
Fluorobiphenyl	8270	53	43-116
Fluorophenol	8270	57	21-100
Nitrobenzene-d5	8270	36	35-114

Project: Vernon Briggs**Report #:** 27073**Sample:** 2032

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Acenaphthene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Acenaphthylene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Anthracene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Benzo(a)anthracene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Benzo(a)pyrene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Benzo(b)fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Benzo(ghi)perylene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Benzo(k)fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Chrysene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Dibenz(ah)anthracene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Fluorene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Indeno(1,2,3-cd)pyrene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Naphthalene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Phenanthrene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM
Pyrene	<1000	µg/Kg	1000	8270	6/3/97	12:38	KLM

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27074

Project: Vernon Briggs

Sample: 2033

Matrix: soil

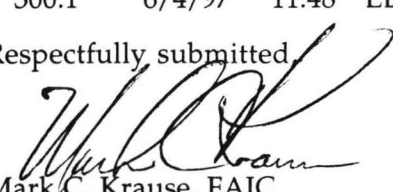
Date/Time Taken: 5/22/97 14:32

Date/Time Rec'd: 5/23/97 17:40

Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Moisture	22.9	% dry wt	0.1	ASA	6/6/97	10:20	LBK
Specific Conductance	9900	µS/cm		120.1	6/4/97	12:00	LBK
Petroleum hydrocarbons	630	mg/Kg	10	418.1	6/5/97	16:30	LBK
Arsenic	6.0	mg/Kg	0.1	6010	5/30/97	10:22	LBK
Barium	1,500	mg/Kg	0.02	6010	5/30/97	10:22	LBK
Cadmium	0.53	mg/Kg	0.1	6010	5/30/97	10:22	LBK
Chromium	390	mg/Kg	0.1	6010	5/30/97	10:22	LBK
Lead	49	mg/Kg	0.1	6010	5/30/97	10:22	LBK
Mercury	<0.02	mg/Kg	0.02	7470	5/29/97	12:17	LBK
Selenium	<0.1	mg/Kg	0.1	6010	5/30/97	10:22	LBK
Silver	<0.1	mg/Kg	0.1	6010	5/30/97	10:22	LBK
Chloride	130	mg/Kg	0.5	300.1	6/4/97	11:48	LBK

Respectfully submitted,


Mark C. Krause, FAIC

Project: Vernon Briggs**Sample:** 2033**Report #:** 27074**Quality Assurance Data**

Parameter	Blank	Precision	Limit	M.S.	M.S.D.	Limits
Moisture		6.77	10			
Specific Conductance		2.04	10			
Petroleum hydrocarbons	<2	46.29	48.4			
Arsenic	<0.005	7.32	20	97.3	104.7	75 - 125
Barium	<0.001	9.73	20	92.6	84	75 - 125
Cadmium	<0.005	2.70	20	97.3	94.7	75 - 125
Chromium	<0.005	13.53	20	93.0	106.5	75 - 125
Lead	<0.005	2.50	20	100.9	98.4	75 - 125
Mercury	<0.001	0.40	20	98.7	98.3	75 - 125
Selenium	<0.005	6.77	20	102.2	95.5	75 - 125
Silver	<0.005	5.11	20	87.7	92.3	75 - 125
Chloride	<0.05	0.22	20	105.5	105.7	75 - 125

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759

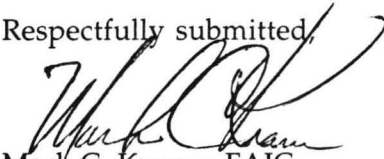
512-471-0140

Report #: 27075**Report of Laboratory Analysis****Project:** Vernon Briggs**Sample:** 2034**Matrix:** soil**Date/Time Taken:** 5/22/97 14:44**Date/Time Rec'd:** 5/23/97 17:40

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Moisture	20.9	% dry wt	0.1	ASA	6/6/97	10:20	LBK
Specific Conductance	4020	µS/cm		120.1	6/4/97	12:00	LBK
Petroleum hydrocarbons	2,100	mg/Kg	150	418.1	6/5/97	16:30	LBK
Arsenic	3.9	mg/Kg	0.1	6010	5/30/97	10:27	LBK
Barium	1,200	mg/Kg	0.02	6010	5/30/97	10:27	LBK
Cadmium	0.39	mg/Kg	0.1	6010	5/30/97	10:27	LBK
Chromium	230	mg/Kg	0.1	6010	5/30/97	10:27	LBK
Lead	40	mg/Kg	0.1	6010	5/30/97	10:27	LBK
Mercury	<0.02	mg/Kg	0.02	7470	5/29/97	12:17	LBK
Selenium	<0.1	mg/Kg	0.1	6010	5/30/97	10:27	LBK
Silver	<0.1	mg/Kg	0.1	6010	5/30/97	10:27	LBK
Chloride	580	mg/Kg	0.5	300.1	6/4/97	11:55	LBK

Organic parameters follow this page

Respectfully submitted,


Mark C. Krause, FAIC

Project: Vernon Briggs**Report #:** 27075**Sample:** 2034

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Acenaphthene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Acenaphthylene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Anthracene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Benzo(a)anthracene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Benzo(a)pyrene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Benzo(b)fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Benzo(ghi)perylene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Benzo(k)fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
bis(2-ethylhexyl)phthalate	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Chrysene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Di-n-octylphthalate	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Dibenz(ah)anthracene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Fluorene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Indeno(1,2,3-cd)pyrene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Naphthalene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Phenanthrene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM
Pyrene	<1000	µg/Kg	1000	8270	6/3/97	13:28	KLM

Project: Vernon Briggs**Sample:** 2034**Report #:** 27075**Report of Laboratory Quality Assurance**

Parameter	Blank	Precision	Limit	M.S.	M.S.D.	Limits
Moisture		6.77	10			
Specific Conductance		2.04	10			
Petroleum hydrocarbons	<2	46.29	48.4			
Arsenic	<0.005	7.32	20	97.3	104.7	75 - 125
Barium	<0.001	9.73	20	92.6	84	75 - 125
Cadmium	<0.005	2.70	20	97.3	94.7	75 - 125
Chromium	<0.005	13.53	20	93.0	106.5	75 - 125
Lead	<0.005	2.50	20	100.9	98.4	75 - 125
Mercury	<0.001	0.40	20	98.7	98.3	75 - 125
Selenium	<0.005	6.77	20	102.2	95.5	75 - 125
Silver	<0.005	5.11	20	87.7	92.3	75 - 125
Chloride	<0.05	0.22	20	105.5	105.7	75 - 125

Surrogate	Method	Recovery	Limits
Phenol-d6	8270	46	10- 94
Terphenyl-d14	8270	38	33-141
Tribromophenol	8270	18	10-123
Fluorobiphenyl	8270	45	43-116
Fluorophenol	8270	51	21-100
Nitrobenzene-d5	8270	40	35-114

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759

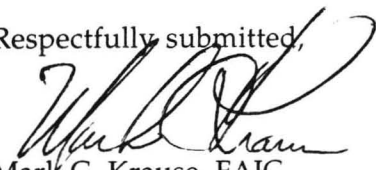
512-471-0140

Report #: 27076**Report of Laboratory Analysis****Project:** Vernon Briggs**Sample:** 2035**Matrix:** soil**Date/Time Taken:** 5/22/97 15:50**Date/Time Rec'd:** 5/23/97 17:40

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Moisture	6.4	% dry wt	0.1	ASA	6/6/97	10:20	LBK
Specific Conductance	2780	µS/cm		120.1	6/4/97	12:00	LBK
Petroleum hydrocarbons	680	mg/Kg	10	418.1	6/5/97	16:30	LBK
Arsenic	4.0	mg/Kg	0.1	6010	5/30/97	10:49	LBK
Barium	1,800	mg/Kg	0.02	6010	5/30/97	10:49	LBK
Cadmium	0.26	mg/Kg	0.1	6010	5/30/97	10:49	LBK
Chromium	240	mg/Kg	0.1	6010	5/30/97	10:49	LBK
Lead	27	mg/Kg	0.1	6010	5/30/97	10:49	LBK
Mercury	<0.02	mg/Kg	0.02	7470	5/29/97	13:42	LBK
Selenium	<0.1	mg/Kg	0.1	6010	5/30/97	10:49	LBK
Silver	<0.1	mg/Kg	0.1	6010	5/30/97	10:49	LBK
Chloride	230	mg/Kg	0.5	300.1	6/4/97	12:08	LBK

Organic parameters follow this page

Respectfully submitted,


Mark C. Krause, FAIC

Project: Vernon Briggs**Sample:** 2035**Report #:** 27076**Report of Laboratory Quality Assurance**

Parameter	Blank	Precision	Limit	M.S.	M.S.D.	Limits
Moisture		6.77	10			
Specific Conductance		2.04	10			
Petroleum hydrocarbons	<2	46.29	48.4			
Arsenic	<0.005	1.30	20	99.9	98.6	75 - 125
Barium	<0.001	13.31	20	79.2	90.5	75 - 125
Cadmium	<0.005	2.36	20	100.2	102.6	75 - 125
Chromium	<0.005	0.58	20	85.1	84.6	75 - 125
Lead	<0.005	5.74	20	104.9	111.1	75 - 125
Mercury	<0.001	0.59	20	84.7	84.2	75 - 125
Selenium	<0.005	4.99	20	108.7	103.4	75 - 125
Silver	<0.005	8.48	20	91.4	99.5	75 - 125
Chloride	<0.05	0.22	20	105.5	105.7	75 - 125

Surrogate	Method	Recovery	Limits
Phenol-d6	8270	53	10- 94
Terphenyl-d14	8270	41	33-141
Tribromophenol	8270	19	10-123
Fluorobiphenyl	8270	45	43-116
Fluorophenol	8270	58	21-100
Nitrobenzene-d5	8270	41	35-114

Project: Vernon Briggs**Report #:** 27076**Sample:** 2035

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Acenaphthene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Acenaphthylene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Anthracene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Benzo(a)anthracene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Benzo(a)pyrene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Benzo(b)fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Benzo(ghi)perylene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Benzo(k)fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Chrysene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Dibenz(ah)anthracene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Fluoranthene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Fluorene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Indeno(1,2,3-cd)pyrene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Naphthalene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Phenanthrene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM
Pyrene	<1000	µg/Kg	1000	8270	6/3/97	14:19	KLM

ChemSOLVE

11629 Manchaca Road

Austin, Texas 78748

Phone: 512-280-7680 FAX: 512-280-7651

Email: Chemsolve@aol.com

WWW: http://www.eden.com/~chemsolve/

REPORT TO:

CONTACT JERI SULLIVAN

COMPANY BUREAU OF ECONOMIC GEOLOGY

ADDRESS 10100 BURNET

AUSTIN TX

PHONE 471-1534

FAX

BILL TO:

SAME

CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD

Page 1 of 1

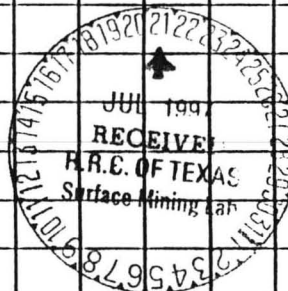
Project Name: RRC - VERNON BRIGGS

Analytical Request:

Project No.:

Turnaround: NORMAL

Sample ID	Date	Time	No. of Cont.	Matrix	TPH	EC	CHLORIDE	BROMIDE	MOISTURE								Lab Number	Comments RRC LAB NO.
VB MW-1/5-5.5'	7/16/97	11:50	1	SOIL	X	X	X										2038	3905E
VB MW-1/14-14.5'	7/16/97	12:00	1	SOIL	X	X	X										2039	3906E
VB MW-2/0.5-1.0'	7/16/97	16:10	1	SOIL	X	X	X										2040	3907E
VB MW-2/7-7.5'	7/16/97	16:20	1	SOIL	X	X	X										2041	3908E
VB MW-3/4-4.5'	7/16/97	19:30	1	SOIL	X	X	X										2042	3909E
VB MW-3/9.5-10'	7/16/97	19:40	1	SOIL	X	X	X										2043	3910E
SPILL OVER SE/0-1'	7/17/97	10:30	1	SOIL	X	X	X	X	X								2044	3911E
SPILL OVER SOUTH/0-1'	7/17/97	10:45	1	SOIL	X	X	X	X	X								2045	3912E
SPILL OVER SW/0-1'	7/17/97	11:00	1	SOIL	X	X	X	X	X								2046	3913E
BACKGROUN	7/17/97	15:00	1	SOIL	X	X	X	X	X								2047	3914E



Relinquished By

Date

Time

Received By

Carrier

Date

Time

	7/21/97	0730	Carl Nelson		7/21/97	1415

in DB

RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY

Soil Analysis Report

Lab No. 3905E

RRC Custody Tag No.

Sample Identification: RRC-Vernon Briggs, Sample ID VBMW-1/5-55'

Submitted by: Special Response

Date Collected:

Date Received: 07-21-1997 Date Completed: 07-30-1997

ANALYSIS	VALUE	UNITS
Chloride (1:1 extract)	1062.	mg/L
Oil and Grease (as % dry solids)	0.00	%
pH (1:1 extract)	7.20	
Total Petroleum Hydrocarbons	0.00	%

Comments: Results to Dr. Jeri Sullivan - BEG
Copy to RRC - Site Remediation

Data Verification

Carl Nelson Jr.

RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY

Soil Analysis Report

Lab No. 3906E

RRC Custody Tag No.

Sample Identification: RRC-Vernon Briggs, Sample ID VBMW-1/14-14.5'

Submitted by: Special Response

Date Collected:

Date Received: 07-21-1997 Date Completed: 07-30-1997

ANALYSIS	VALUE	UNITS
Chloride (1:1 extract)	357.	mg/L
Oil and Grease (as % dry solids)	0.00	%
pH (1:1 extract)	6.51	
Total Petroleum Hydrocarbons	0.00	%

Comments: Results to Dr. Jeri Sullivan - BEG
Copy to RRC - Site Remediation

Data Verification

Carl Nelson Jr.

RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY

Soil Analysis Report

Lab No. 3907E

RRC Custody Tag No.

Sample Identification: RRC-Vernon Briggs, Sample ID VBMW-2/0.5-1.0'

Submitted by: Special Response

Date Collected:

Date Received: 07-21-1997 Date Completed: 07-30-1997

ANALYSIS	VALUE	UNITS
Chloride (1:1 extract)	98.	mg/L
Oil and Grease (as % dry solids)	0.00	%
pH (1:1 extract)	7.71	
Total Petroleum Hydrocarbons	0.00	%

Comments: Results to Dr. Jeri Sullivan - BEG
Copy to RRC - Site Remediation

Data Verification Carl Wilson Jr.

RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY

Soil Analysis Report

Lab No. 3908E

RRC Custody Tag No.

Sample Identification: RRC-Vernon Briggs, Sample ID VBMW-2/7-7.5'

Submitted by: Special Response

Date Collected:

Date Received: 07-21-1997 Date Completed: 07-30-1997

ANALYSIS	VALUE	UNITS
Chloride (1:1 extract)	218.	mg/L
Oil and Grease (as % dry solids)	0.00	%
pH (1:1 extract)	7.50	
Total Petroleum Hydrocarbons	0.00	%

Comments: Results to Dr. Jeri Sullivan - BEG
Copy to RRC - Site Remediation

Data Verification

Carl Nelson Jr.

RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY

Soil Analysis Report

Lab No. 3909E

RRC Custody Tag No.

Sample Identification: RRC-Vernon Briggs, Sample ID VBMW-3/4-4.5'

Submitted by: Special Response

Date Collected:

Date Received: 07-21-1997 Date Completed: 08-04-1997

ANALYSIS	VALUE	UNITS
Chloride (1:1 extract)	169.	mg/L
Oil and Grease (as % dry solids)	0.00	%
pH (1:1 extract)	6.91	
Total Petroleum Hydrocarbons	0.00	%

Comments: Results to Dr. Jeri Sullivan - BEG
Copy to RRC - Site Remediation

Data Verification

Carl Nelson Jr.

RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY

Soil Analysis Report

Lab No. 3910E

RRC Custody Tag No.

Sample Identification: RRC-Vernon Briggs, Sample ID VBMW-3/9.5-10'

2043

Submitted by: Special Response

Date Collected:

Date Received: 07-21-1997 Date Completed: 08-04-1997

ANALYSIS	VALUE	UNITS
Chloride (1:1 extract)	294.	mg/L
Oil and Grease (as % dry solids)	0.00	%
pH (1:1 extract)	7.53	
Total Petroleum Hydrocarbons	0.00	%

Comments: Results to Dr. Jeri Sullivan - BEG
Copy to RRC - Site Remediation

Data Verification

Caul Nelson Jr.

RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY

Soil Analysis Report

Lab No. 3911E

RRC Custody Tag No.

Sample Identification: RRC-Vernon Briggs, Sample ID Spillover SE/0-1'

2044

Submitted by: Special Response

Date Collected:

Date Received: 07-21-1997 Date Completed: 08-28-1997

ANALYSIS		VALUE	UNITS
Arsenic	TOTAL	<0.5	mg/kg
Barium	TOTAL	637.	mg/kg
Cadmium	TOTAL	<0.5	mg/kg
Chloride (1:1 extract)		93.	mg/L
Chromium	TOTAL	29.	mg/kg
Electrical Conductivity	1:1 Extract	0.70	mmhos/cm
Lead	TOTAL	<0.5	mg/kg
Mercury	TOTAL	<0.1	mg/kg
Moisture		13	%
Oil and Grease (as % dry solids)		0.00	%
Selenium	TOTAL	<0.5	mg/kg
Silver	TOTAL	<0.5	mg/kg
Total Petroleum Hydrocarbons		0.00	%

Comments: Results to Dr. Jeri Sullivan - BEG
Copy to RRC - Site Remediation

Data Verification

Carl Melson Jr.

RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY

Soil Analysis Report

Lab No. 3912E

RRC Custody Tag No.

Sample Identification: RRC-Vernon Briggs, Sample ID Spillover South/0-1'

2045

Submitted by: Special Response

Date Collected:

Date Received: 07-21-1997 Date Completed: 08-28-1997

ANALYSIS	VALUE	UNITS
Arsenic TOTAL	<0.5	mg/kg
Barium TOTAL	979.	mg/kg
Cadmium TOTAL	<0.5	mg/kg
Chloride (1:1 extract)	304.	mg/L
Chromium TOTAL	49.	mg/kg
Electrical Conductivity 1:1 Extract	1.5	mmhos/cm
Lead TOTAL	<0.5	mg/kg
Mercury TOTAL	<0.1	mg/kg
Moisture	22	%
Oil and Grease (as % dry solids)	0.07	%
Selenium TOTAL	<0.5	mg/kg
Silver TOTAL	<0.5	mg/kg
Total Petroleum Hydrocarbons	0.07	%

Comments: Results to Dr. Jeri Sullivan - BEG
Copy to RRC - Site Remediation

Data Verification

Carl Nelson Jr.

RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY

Soil Analysis Report

Lab No. 3913E

RRC Custody Tag No.

Sample Identification: RRC-Vernon Briggs, Sample ID Spillover SW/0-1'

2046

Submitted by: Special Response

Date Collected:

Date Received: 07-21-1997 Date Completed: 08-28-1997

ANALYSIS	VALUE	UNITS
Arsenic TOTAL	<0.5	mg/kg
Barium TOTAL	542.	mg/kg
Cadmium TOTAL	<0.5	mg/kg
Chloride (1:1 extract)	91.	mg/L
Chromium TOTAL	25.	mg/kg
Electrical Conductivity 1:1 Extract	0.60	mmhos/cm
Lead TOTAL	<0.5	mg/kg
Mercury TOTAL	<0.1	mg/kg
Moisture	17	%
Oil and Grease (as % dry solids)	0.01	%
Selenium TOTAL	<0.5	mg/kg
Silver TOTAL	<0.5	mg/kg
Total Petroleum Hydrocarbons	0.01	%

Comments: Results to Dr. Jeri Sullivan - BEG
Copy to RRC - Site Remediation

Data Verification

Carl Nelson

RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION LABORATORY

Soil Analysis Report

Lab No. 3914E

RRC Custody Tag No.

Sample Identification: RRC-Vernon Briggs, Sample ID Background

Submitted by: Special Response

Date Collected:

Date Received: 07-21-1997 Date Completed: 08-28-1997

ANALYSIS	VALUE	UNITS
Arsenic TOTAL	<0.5	mg/kg
Barium TOTAL	367.	mg/kg
Cadmium TOTAL	<0.5	mg/kg
Chloride (1:1 extract)	51.	mg/L
Chromium TOTAL	30.	mg/kg
Electrical Conductivity 1:1 Extract	0.39	mmhos/cm
Lead TOTAL	<0.5	mg/kg
Mercury TOTAL	<0.1	mg/kg
Moisture	18	%
Oil and Grease (as % dry solids)	0.00	%
Selenium TOTAL	<0.5	mg/kg
Silver TOTAL	<0.5	mg/kg
Total Petroleum Hydrocarbons	0.00	%

Comments: Results to Dr. Jeri Sullivan - BEG
Copy to RRC - Site Remediation

Data Verification

Carl Nelson Jr.

WWW: <http://www.eden.com/~chemsolv/>

<i>[Signature]</i>	7/18/92	18 20	Caryn Drumm	HID 6:20 7/18
			R 15/100	

Date 8/15/97

Client Dr. Jeri Sullivan, Research Associate
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78713

Project: Vernon Briggs
Sample: 27809; VMW2 (0-2')

Description	% Passing
Hydrometer Analysis (ASTM D 422)	
Sieve Size:	
No. 4	100
No. 10	99.9
No. 40	99
No. 200	56.1
.074 mm	8
.005 mm	6
.002 mm	3
.001 mm	2
Atterburg Limits (ASTM D 4318)	
Liquid Limit:	34
Plastic Limit:	12
Plasticity Limit:	22
Moisture Content (ASTM D 2216)	.188 cm ³ /1.0 cm ³
Bulk Dry Density (ASTM D 2166)	1780943g/m ³
Unconfined Compression (ASTM D 2166)	Cohesion 0.41 TSF

Date 8/15/97

Client Dr. Jeri Sullivan, Research Associate
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78713

Project: Vernon Briggs
Sample: 27809**; VMW2 (0-2')

** Due to an unknown component, the plasticity index indicates a semi-plastic material although the hydrometer analysis shows no indication of a plastic material.

Date 8/15/97

Client Dr. Jeri Sullivan, Research Associate
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78713

Project: Vernon Briggs
Sample: 27810; VBH1 (11-14')

Description	% Passing
Hydrometer Analysis (ASTM D 422)	
Sieve Size:	
No. 4	100
No. 10	100
No. 40	100
No. 200	44
.074 mm	0
.005 mm	0
.002 mm	0
.001 mm	0
	Result
Organic Carbon, WT. %	0.36
EPA 600/2-78-054 3.2.14 (Low Temperature Ignition)	

Date 8/15/97

Client Dr. Jeri Sullivan, Research Associate
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78713

Project: Vernon Briggs
Sample: 27811**; VB Background

Description	% Passing
Hydrometer Analysis (ASTM D 422)	
Sieve Size:	
No. 4	100
No. 10	100
No. 40	99.4
No. 200	62.1
.074 mm	3.5
.005 mm	0
.002 mm	0
.001 mm	0
Atterburg Limits (ASTM D 4318)	
Liquid Limit:	29
Plastic Limit:	15
Plasticity Limit:	14

APPENDIX B—Ground-Water Data

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Project: BRC Vinson *Vernon Briggs*

Sample: 2047

Date/Time Taken: 7/18/97 17:00

Date/Time Rec'd: 7/21/97 14:00

Report #: 27874

Matrix: water

Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Benzene	<1	µg/L	1	8020	7/31/97 18:28	KLM
Ethylbenzene	<1	µg/L	1	8020	7/31/97 18:28	KLM
m,p-Xylenes	<1	µg/L	1	8020	7/31/97 18:28	KLM
MTBE	<10	µg/L	10	8020	7/31/97 18:28	KLM
o-Xylene	<1	µg/L	1	8020	7/31/97 18:28	KLM
Toluene	<1	µg/L	1	8020	7/31/97 18:28	KLM

Quality Assurance Data

Surrogate	Method	Recovery	Limits
Fluorobenzene	8260	96	67-128
Bromofluorobenzene	8260	97	70-130

Respectfully submitted,

Mark C. Krause
Mark C. Krause, FAIC

ChemSOLVE

11629 Manchaca Road

Austin, Texas 78748

Phone: 512-280-7680 FAX: 512-280-7651

Email: Chemsolve@aol.com

WWW: <http://www.eden.com/~chemsol/>

REPORT TO:	BILL TO:
CONTACT <u>DR. JERI SULLIVAN</u>	
COMPANY <u>B.E.G</u>	
ADDRESS	
PHONE <u>471-6285</u> FAX <u>471-</u>	

CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD

Project Name: <u>RRC VERNON BRIGGS</u>					Analytical Request:										Cations =		
Project No.:															Anions =		
Turnaround: <u>NLT 2 WEEKS</u>																	
Sample ID	Date	Time	No. of Cont.	Matrix	VOC	TPH	CHLORIDE	PCRA 8 metals	Cations	Anions						Lab Number	Comments
2053	7/17/97	1830	1	H ₂ O		X	X									✓ 27830-W	SW EAST
2054		1830	1						X	X						27831-W	SW EAST
2055		1830	1					X								✓ 27832-W	SW EAST
2057		1850	1			X	X									✓ 27833-W	SW SOUTH
2058		1850	1					X								✓ 27834-W	SW SOUTH
2059		1850	1						X	X						27835-W	SW SOUTH
2062		1443	1			X	X									✓ 27836-W	Holton
2063		1443	1					X								✓ 27837-W	Holton
2064		1443	1						X	X						27838-W	Holton
2061		1443	2		X											✓ 27839-W	Holton
2066			2		X											✓ 27840-W	Brooker

Relinquished By	Date	Time	Received By	Carrier	Date	Time
<u>[Signature]</u>	7/18/97	1820	<u>[Signature]</u>	HWD	7/18/97	6:20

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

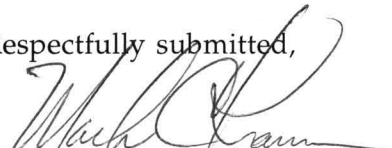
Report #: 27830**Project:** RRC Vernon Briggs**Sample:** 2053**Matrix:** water**Date/Time Taken:** 7/17/97 18:30**Date/Time Rec'd:** 7/18/97 18:20**Report of Laboratory Analysis**

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Petroleum hydrocarbons	1.0	mg/L	0.2	418.1	7/31/97 16:30	LBK
Chloride	700	mg/L	0.5	300.1	8/5/97 10:15	DLS

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Chloride	<0.05	0.55	20	77.9	78.3	75 - 125
Petroleum hydrocarbons	<2	0.00	48.4			

Respectfully submitted,


Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27831

Project: RRC Vernon Briggs

Sample: 2054

Matrix: water

Date/Time Taken: 7/17/97 18:30

Date/Time Rec'd: 7/18/97 18:20

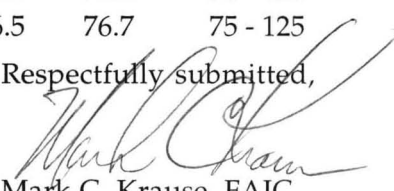
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time	Run	By	Blank
Barium	0.79	mg/L	0.0050	6010	8/17/97	23:29	MCK	
Calcium	160	mg/L	0.050	6010	8/17/97	23:29	MCK	
Magnesium	25	mg/L	0.050	6010	8/17/97	23:29	MCK	
Potassium	11	mg/L	0.050	6010	8/17/97	23:29	MCK	
Sodium	190	mg/L	0.1	6010	8/2/97	11:30	MCK	
Strontium	0.44	mg/L	0.0050	6010	8/17/97	23:29	MCK	
Alkalinity, total	150	mg/L	10	310.1	8/26/97	15:00	LBK	
Bromide	19	mg/L	1	300.1	8/5/97	10:30	DLS	
Chloride	470	mg/L	0.5	300.1	8/5/97	10:30	DLS	
Sulfate	180	mg/L	0.5	300.1	8/5/97	10:30	DLS	

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Alkalinity, total	<10	0.00	10			
Barium	<0.005	7.67	20	94.0	101.5	75 - 125
Bromide	<0.1	0.27	20	107.9	108.2	75 - 125
Calcium	<0.05	12.31	20	96.0	108.6	75 - 125
Chloride	<0.05	0.55	20	77.9	78.3	75 - 125
Magnesium	<0.05	11.14	20	82.2	91.9	75 - 125
Potassium	<0.05	7.96	20	88.8	82	75 - 125
Sodium	<0.05	3.45	20	94.2	91	75 - 125
Strontium	<0.005	8.56	20	85.2	78.2	75 - 125
Sulfate	<0.05	0.24	20	76.5	76.7	75 - 125

Respectfully submitted,


Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27832

Project: RRC Vernon Briggs

Sample: 2055

Matrix: water

Date/Time Taken: 7/17/97 18:30

Date/Time Rec'd: 7/18/97 18:20

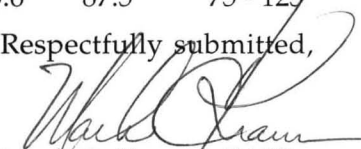
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Arsenic	0.019	mg/L	0.005	6010	8/2/97 14:02	MCK
Barium	0.34	mg/L	0.001	6010	8/4/97 12:50	MCK
Cadmium	<0.005	mg/L	0.005	6010	8/2/97 12:38	MCK
Chromium	<0.005	mg/L	0.005	6010	8/1/97 17:21	MCK
Lead	<0.005	mg/L	0.005	6010	8/1/97 16:20	MCK
Mercury	<0.0002	mg/L	0.0002	7470	8/2/97 14:23	MCK
Selenium	<0.005	mg/L	0.005	6010	8/2/97 15:59	MCK
Silver	0.023	mg/L	0.01	6010	7/30/97 16:30	LBK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Arsenic	<0.005	8.62	20	120.9	110.5	75 - 125
Barium	<0.001	0.00	20	87.5	87.5	75 - 125
Cadmium	<0.005	0.00	20	93.4	93.4	75 - 125
Chromium	<0.005	1.27	20	101.6	102.9	75 - 125
Lead	<0.005	6.89	20	89.1	95.2	75 - 125
Mercury	<0.0002	8.45	20	109.6	100.6	75 - 125
Selenium	<0.005	11.42	20	108.8	96.4	75 - 125
Silver	<0.01	8.33	20	95.6	87.5	75 - 125

Respectfully submitted,


Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

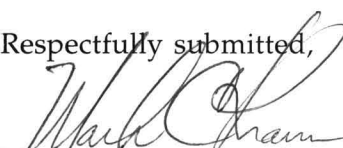
Report #: 27833**Project:** RRC Vernon Briggs**Sample:** 2057**Matrix:** water**Date/Time Taken:** 7/17/97 18:50**Date/Time Rec'd:** 7/18/97 18:20**Report of Laboratory Analysis**

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Petroleum hydrocarbons	2.8	mg/L	0.2	418.1	7/31/97 16:30	LBK
Chloride	510	mg/L	0.5	300.1	8/6/97 8:42	DLS

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Chloride	<0.05	0.32	20	87.8	87.5	75 - 125
Petroleum hydrocarbons	<2	26.27	48.4			

Respectfully submitted,


Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27834

Project: RRC Vernon Briggs

Sample: 2058

Matrix: water

Date/Time Taken: 7/17/97 18:50

Date/Time Rec'd: 7/18/97 18:20

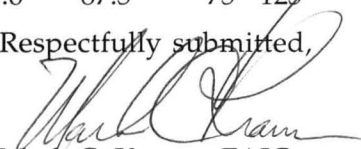
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Arsenic	0.027	mg/L	0.005	6010	8/2/97 14:02	MCK
Barium	2.0	mg/L	0.001	6010	8/4/97 12:50	MCK
Cadmium	<0.005	mg/L	0.005	6010	8/2/97 12:38	MCK
Chromium	<0.005	mg/L	0.005	6010	8/1/97 17:21	MCK
Lead	<0.005	mg/L	0.005	6010	8/1/97 16:20	MCK
Mercury	0.00020	mg/L	0.0002	7470	8/2/97 14:23	MCK
Selenium	<0.005	mg/L	0.005	6010	8/2/97 15:59	MCK
Silver	<0.01	mg/L	0.01	6010	7/30/97 16:30	LBK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Arsenic	<0.005	8.62	20	120.9	110.5	75 - 125
Barium	<0.001	0.00	20	87.5	87.5	75 - 125
Cadmium	<0.005	0.00	20	93.4	93.4	75 - 125
Chromium	<0.005	1.27	20	101.6	102.9	75 - 125
Lead	<0.005	6.89	20	89.1	95.2	75 - 125
Mercury	<0.0002	8.45	20	109.6	100.6	75 - 125
Selenium	<0.005	11.42	20	108.8	96.4	75 - 125
Silver	<0.01	8.33	20	95.6	87.5	75 - 125

Respectfully submitted,


Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27835

Project: RRC Vernon Briggs

Sample: 2059

Matrix: water

Date/Time Taken: 7/17/97 18:50

Date/Time Rec'd: 7/18/97 18:20

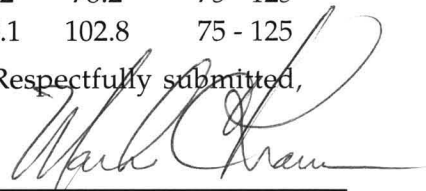
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Barium	3.2	mg/L	0.0050	6010	8/17/97 23:34	MCK
Calcium	100	mg/L	0.050	6010	8/17/97 23:34	MCK
Magnesium	13	mg/L	0.050	6010	8/17/97 23:34	MCK
Potassium	22	mg/L	0.050	6010	8/17/97 23:34	MCK
Sodium	240	mg/L	0.050	6010	8/17/97 23:34	MCK
Strontium	0.85	mg/L	0.0050	6010	8/17/97 23:34	MCK
Alkalinity, total	170	mg/L	10	310.1	7/30/97 13:00	DLS
Bromide	56	mg/L	1	300.1	8/6/97 9:03	DLS
Chloride	530	mg/L	0.5	300.1	8/6/97 9:03	DLS
Sulfate	36	mg/L	0.5	300.1	8/6/97 9:03	DLS

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Alkalinity, total	<10	18.18	10			
Barium	<0.005	7.67	20	94.0	101.5	75 - 125
Bromide	<0.1	0.00	20	90.2	90.2	75 - 125
Calcium	<0.05	12.31	20	96.0	108.6	75 - 125
Chloride	<0.05	0.32	20	87.8	87.5	75 - 125
Magnesium	<0.05	11.14	20	82.2	91.9	75 - 125
Potassium	<0.05	7.96	20	88.8	82	75 - 125
Sodium	<0.05	3.45	20	94.2	91	75 - 125
Strontium	<0.005	8.56	20	85.2	78.2	75 - 125
Sulfate	<0.05	2.26	20	105.1	102.8	75 - 125

Respectfully submitted,



To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

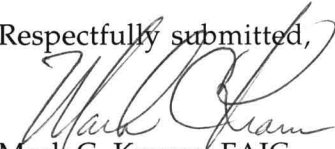
Report #: 27836**Project:** RRC Vernon Briggs**Sample:** 2062**Matrix:** water**Date/Time Taken:** 7/17/97 14:43**Date/Time Rec'd:** 7/18/97 18:20**Report of Laboratory Analysis**

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Petroleum hydrocarbons	0.63	mg/L	0.2	418.1	7/31/97 16:30	LBK
Chloride	120	mg/L	0.05	300.1	8/6/97 9:10	DLS

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Chloride	<0.05	0.32	20	87.8	87.5	75 - 125
Petroleum hydrocarbons	<2	26.27	48.4			

Respectfully submitted,


Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27837

Project: RRC Vernon Briggs

Sample: 2063

Matrix: water

Date/Time Taken: 7/17/97 14:43

Date/Time Rec'd: 7/18/97 18:20

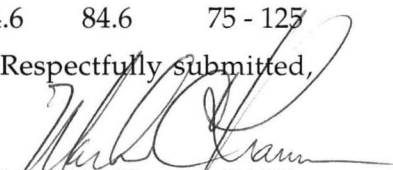
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Arsenic	0.0070	mg/L	0.005	6010	8/2/97	14:02	MCK
Barium	0.43	mg/L	0.001	6010	8/4/97	14:47	MCK
Cadmium	<0.005	mg/L	0.005	6010	8/2/97	12:38	MCK
Chromium	0.0092	mg/L	0.005	6010	8/1/97	17:29	MCK
Lead	0.064	mg/L	0.005	6010	8/1/97	16:20	MCK
Mercury	<0.0002	mg/L	0.0002	7470	8/2/97	14:23	MCK
Selenium	<0.005	mg/L	0.005	6010	8/2/97	15:59	MCK
Silver	0.056	mg/L	0.005	6010	8/1/97	13:57	MCK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Arsenic	<0.005	8.62	20	120.9	110.5	75 - 125
Barium	<0.001	9.67	20	77.4	84.9	75 - 125
Cadmium	<0.005	0.00	20	93.4	93.4	75 - 125
Chromium	<0.005	4.58	20	122.5	116.8	75 - 125
Lead	<0.005	6.89	20	89.1	95.2	75 - 125
Mercury	<0.0002	8.45	20	109.6	100.6	75 - 125
Selenium	<0.005	11.42	20	108.8	96.4	75 - 125
Silver	<0.005	0.00	20	84.6	84.6	75 - 125

Respectfully submitted,


Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

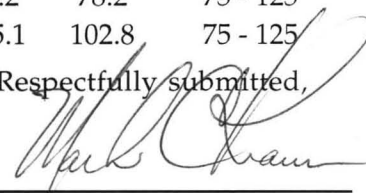
Report #: 27838**Project:** RRC Vernon Briggs**Sample:** 2064**Matrix:** water**Date/Time Taken:** 7/17/97 14:43**Date/Time Rec'd:** 7/18/97 18:20**Report of Laboratory Analysis**

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Barium	0.24	mg/L	0.0050	6010	8/17/97 23:38	MCK
Calcium	78	mg/L	0.050	6010	8/17/97 23:38	MCK
Magnesium	20	mg/L	0.050	6010	8/17/97 23:38	MCK
Potassium	10	mg/L	0.050	6010	8/17/97 23:38	MCK
Sodium	110	mg/L	0.050	6010	8/17/97 23:38	MCK
Strontium	0.36	mg/L	0.0050	6010	8/17/97 23:38	MCK
Alkalinity, total	270	mg/L	10	310.1	8/13/97 14:00	DLS
Bromide	<0.1	mg/L	0.1	300.1	8/6/97 9:21	DLS
Chloride	120	mg/L	0.05	300.1	8/6/97 9:21	DLS
Sulfate	20	mg/L	0.05	300.1	8/6/97 9:21	DLS

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Alkalinity, total	<10	8.33	10			
Barium	<0.005	7.67	20	94.0	101.5	75 - 125
Bromide	<0.1	0.00	20	90.2	90.2	75 - 125
Calcium	<0.05	12.31	20	96.0	108.6	75 - 125
Chloride	<0.05	0.32	20	87.8	87.5	75 - 125
Magnesium	<0.05	11.14	20	82.2	91.9	75 - 125
Potassium	<0.05	7.96	20	88.8	82	75 - 125
Sodium	<0.05	3.45	20	94.2	91	75 - 125
Strontium	<0.005	8.56	20	85.2	78.2	75 - 125
Sulfate	<0.05	2.26	20	105.1	102.8	75 - 125

Respectfully submitted,



Monday, August 4, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 512-471-0140

Report #: 27839

Report of Laboratory Analysis

Project: RRC Vernon Briggs

Sample: 2061

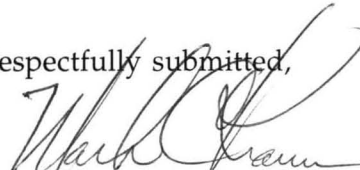
Matrix: water

Date/Time Taken: 7/17/97 14:43

Date/Time Rec'd: 7/18/97 18:20

Organic parameters follow this page

Respectfully submitted,


Mark C. Krause, FAIC

Project: RRC Vernon Briggs**Report #:** 27839**Sample:** 2061

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
1,1,1,2-tetrachloroethane	<5	µg/L	5	8260	7/31/97	9:52	KLM
1,1,1-trichloroethane	<5	µg/L	5	8260	7/31/97	9:52	KLM
1,1,2,2-tetrachloroethane	<5	µg/L	5	8260	7/31/97	9:52	KLM
1,1,2-trichloroethane	<5	µg/L	5	8260	7/31/97	9:52	KLM
1,1-dichloroethane	<5	µg/L	5	8260	7/31/97	9:52	KLM
1,1-dichloroethene	<5	µg/L	5	8260	7/31/97	9:52	KLM
1,2,3-trichloropropane	<5	µg/L	5	8260	7/31/97	9:52	KLM
1,2,4-trichlorobenzene	<5	µg/L	5	8260	7/31/97	9:52	KLM
1,2-dibromoethane	<5	µg/L	5	8260	7/31/97	9:52	KLM
1,2-dichlorobenzene	<5	µg/L	5	8260	7/31/97	9:52	KLM
1,2-dichloroethane	<5	µg/L	5	8260	7/31/97	9:52	KLM
1,2-dichloropropane	<5	µg/L	5	8260	7/31/97	9:52	KLM
1,3,5-trichlorobenzene	<5	µg/L	5	8260	7/31/97	9:52	KLM
1,3-dichlorobenzene	<5	µg/L	5	8260	7/31/97	9:52	KLM
1,4-dichlorobenzene	<5	µg/L	5	8260	7/31/97	9:52	KLM
2-butanone	<50	µg/L	50	8260	7/31/97	9:52	KLM
2-chlorotoluene	<5	µg/L	5	8260	7/31/97	9:52	KLM
2-Hexanone	<10	µg/L	10	8260	7/31/97	9:52	KLM
4-chlorotoluene	<5	µg/L	5	8260	7/31/97	9:52	KLM
4-methyl-2-pentanone	<10	µg/L	10	8260	7/31/97	9:52	KLM
Acetone	<50	µg/L	50	8260	7/31/97	9:52	KLM
Benzene	<5	µg/L	5	8260	7/31/97	9:52	KLM
Bromobenzene	<5	µg/L	5	8260	7/31/97	9:52	KLM
Bromodichloromethane	<5	µg/L	5	8260	7/31/97	9:52	KLM
Bromoform	<10	µg/L	10	8260	7/31/97	9:52	KLM
Bromomethane	<10	µg/L	10	8260	7/31/97	9:52	KLM
Carbon disulfide	<5	µg/L	5	8260	7/31/97	9:52	KLM
Carbon tetrachloride	<5	µg/L	5	8260	7/31/97	9:52	KLM
Chlorobenzene	<5	µg/L	5	8260	7/31/97	9:52	KLM
Chlorodibromomethane	<5	µg/L	5	8260	7/31/97	9:52	KLM
Chloroethane	<10	µg/L	10	8260	7/31/97	9:52	KLM
Chloroform	<5	µg/L	5	8260	7/31/97	9:52	KLM
Chloromethane	<10	µg/L	10	8260	7/31/97	9:52	KLM

cis-1,2-dichloroethene	<5	µg/L	5	8260	7/31/97	9:52	KLM
cis-1,3-dichloropropene	<5	µg/L	5	8260	7/31/97	9:52	KLM
Dibromomethane	<10	µg/L	10	8260	7/31/97	9:52	KLM
Dichlorodifluoromethane	<10	µg/L	10	8260	7/31/97	9:52	KLM
Ethylbenzene	<5	µg/L	5	8260	7/31/97	9:52	KLM
m,p-Xylenes	<5	µg/L	5	8260	7/31/97	9:52	KLM
Methylene chloride	<10	µg/L	10	8260	7/31/97	9:52	KLM
Naphthalene	<5	µg/L	5	8260	7/31/97	9:52	KLM
o-Xylene	<5	µg/L	5	8260	7/31/97	9:52	KLM
Styrene	<5	µg/L	5	8260	7/31/97	9:52	KLM
Tetrachloroethene	<5	µg/L	5	8260	7/31/97	9:52	KLM
Toluene	<5	µg/L	5	8260	7/31/97	9:52	KLM
trans-1,2-dichloroethene	<5	µg/L	5	8260	7/31/97	9:52	KLM
trans-1,3-dichloropropene	<5	µg/L	5	8260	7/31/97	9:52	KLM
Trichloroethene	<5	µg/L	5	8260	7/31/97	9:52	KLM
Trichlorofluoromethane	<10	µg/L	10	8260	7/31/97	9:52	KLM
Vinyl chloride	<10	µg/L	10	8260	7/31/97	9:52	KLM

Project: RRC Vernon Briggs**Report #:** 27839**Sample:** 2061**Report of Laboratory Quality Assurance**

Surrogate	Method	Recovery	Limits
Toluene-d8	8260	108	86-114
Dibromofluoromethane	8260	94	76-121
Bromofluorobenzene	8260	99	85-117

Monday, August 4, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 512-471-0140

Report #: 27840

Report of Laboratory Analysis

Project: RRC Vernon Briggs

Sample: 2066

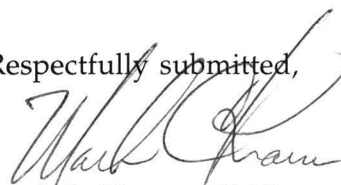
Matrix: water

Date/Time Taken: 7/17/97

Date/Time Rec'd: 7/18/97 18:20

Organic parameters follow this page

Respectfully submitted,



Mark C. Krause, FAIC

Project: RRC Vernon Briggs**Report #:** 27840**Sample:** 2066

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
1,1,1,2-tetrachloroethane	<5	µg/L	5	8260	7/31/97	10:13	KLM
1,1,1-trichloroethane	<5	µg/L	5	8260	7/31/97	10:13	KLM
1,1,2,2-tetrachloroethane	<5	µg/L	5	8260	7/31/97	10:13	KLM
1,1,2-trichloroethane	<5	µg/L	5	8260	7/31/97	10:13	KLM
1,1-dichloroethane	<5	µg/L	5	8260	7/31/97	10:13	KLM
1,1-dichloroethene	<5	µg/L	5	8260	7/31/97	10:13	KLM
1,2,3-trichloropropane	<5	µg/L	5	8260	7/31/97	10:13	KLM
1,2,4-trichlorobenzene	<5	µg/L	5	8260	7/31/97	10:13	KLM
1,2-dibromoethane	<5	µg/L	5	8260	7/31/97	10:13	KLM
1,2-dichlorobenzene	<5	µg/L	5	8260	7/31/97	10:13	KLM
1,2-dichloroethane	<5	µg/L	5	8260	7/31/97	10:13	KLM
1,2-dichloropropane	<5	µg/L	5	8260	7/31/97	10:13	KLM
1,3,5-trichlorobenzene	<5	µg/L	5	8260	7/31/97	10:13	KLM
1,3-dichlorobenzene	<5	µg/L	5	8260	7/31/97	10:13	KLM
1,4-dichlorobenzene	<5	µg/L	5	8260	7/31/97	10:13	KLM
2-butanone	<50	µg/L	50	8260	7/31/97	10:13	KLM
2-chlorotoluene	<5	µg/L	5	8260	7/31/97	10:13	KLM
2-Hexanone	<10	µg/L	10	8260	7/31/97	10:13	KLM
4-chlorotoluene	<5	µg/L	5	8260	7/31/97	10:13	KLM
4-methyl-2-pentanone	<10	µg/L	10	8260	7/31/97	10:13	KLM
Acetone	<50	µg/L	50	8260	7/31/97	10:13	KLM
Benzene	<5	µg/L	5	8260	7/31/97	10:13	KLM
Bromobenzene	<5	µg/L	5	8260	7/31/97	10:13	KLM
Bromodichloromethane	<5	µg/L	5	8260	7/31/97	10:13	KLM
Bromoform	<10	µg/L	10	8260	7/31/97	10:13	KLM
Bromomethane	<10	µg/L	10	8260	7/31/97	10:13	KLM
Carbon disulfide	<5	µg/L	5	8260	7/31/97	10:13	KLM
Carbon tetrachloride	<5	µg/L	5	8260	7/31/97	10:13	KLM
Chlorobenzene	<5	µg/L	5	8260	7/31/97	10:13	KLM
Chlorodibromomethane	<5	µg/L	5	8260	7/31/97	10:13	KLM
Chloroethane	<10	µg/L	10	8260	7/31/97	10:13	KLM
Chloroform	<5	µg/L	5	8260	7/31/97	10:13	KLM
Chloromethane	<10	µg/L	10	8260	7/31/97	10:13	KLM

cis-1,2-dichloroethene	<5	µg/L	5	8260	7/31/97	10:13	KLM
cis-1,3-dichloropropene	<5	µg/L	5	8260	7/31/97	10:13	KLM
Dibromomethane	<10	µg/L	10	8260	7/31/97	10:13	KLM
Dichlorodifluoromethane	<10	µg/L	10	8260	7/31/97	10:13	KLM
Ethylbenzene	<5	µg/L	5	8260	7/31/97	10:13	KLM
m,p-Xylenes	<5	µg/L	5	8260	7/31/97	10:13	KLM
Methylene chloride	<10	µg/L	10	8260	7/31/97	10:13	KLM
Naphthalene	<5	µg/L	5	8260	7/31/97	10:13	KLM
o-Xylene	<5	µg/L	5	8260	7/31/97	10:13	KLM
Styrene	<5	µg/L	5	8260	7/31/97	10:13	KLM
Tetrachloroethene	<5	µg/L	5	8260	7/31/97	10:13	KLM
Toluene	<5	µg/L	5	8260	7/31/97	10:13	KLM
trans-1,2-dichloroethene	<5	µg/L	5	8260	7/31/97	10:13	KLM
trans-1,3-dichloropropene	<5	µg/L	5	8260	7/31/97	10:13	KLM
Trichloroethene	<5	µg/L	5	8260	7/31/97	10:13	KLM
Trichlorofluoromethane	<10	µg/L	10	8260	7/31/97	10:13	KLM
Vinyl chloride	<10	µg/L	10	8260	7/31/97	10:13	KLM

Project: RRC Vernon Briggs**Report #:** 27840**Sample:** 2066**Report of Laboratory Quality Assurance**

Surrogate	Method	Recovery	Limits
Toluene-d8	8260	107	86-114
Dibromofluoromethane	8260	100	76-121
Bromofluorobenzene	8260	102	85-117

ChemSOLVE

11629 Manchaca Road

Austin, Texas 78748

Phone: 512-280-7680 FAX: 512-280-7651

Email: Chemsolve@aol.com

WWW: <http://www.cden.com/~chemsolv/>

REPORT TO:

CONTACT

Dr. Terri Sullivan

COMPANY

BEG

ADDRESS

PHONE

471 6285

FAX

471 0140

BILL TO:

CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD

Page ____ of ____

Project Name: RRC Vernon Buggs

Analytical Request:

Project No.:

Turnaround:

2 weeks or less

Sample ID	Date	Time	No. of Cont.	Matrix	VOC	TPH	Chloride	PCP & Metals	Cations	Anions	Lab Number	Comments
2067	7/18/97	1507	1	H ₂ O		X	X				✓ 27819-W	Brooker
2068		1507	1						X	X	27820-W	Brooker
2069		1507	1					X			✓ 27821-W	Brooker
2071		1536	2		X						✓ 27822-W	Trailers ^{Normans}
2072		1536	1			X	X				✓ 27823-W	Trailers ^{Normans}
2073		1536	1					X			✓ 27824-W	Trailers ^{Normans}
2074		1536	1						X	X	27825-W	Trailers ^{Normans}
2076		1600	2		X						✓ 27826-W	Shelton
2077		1600	1			X	X				✓ 27827-W	Shelton
2078		1600	1					X			✓ 27828-W	Shelton
2079		1600	1						X	X	27829-W	Shelton

Relinquished By

[Signature]

Date

Time

Received By

Carrier

Date

Time

7/18/97

1820

[Signature]

40

7/18/97

6:20

ChemSOLVE

chemistry for a changing environment
11629 Manchaca Road • Austin, TX 78748 • (512) 280-7680

Friday, August 15, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27819

Project: RRC Vernon Briggs

Sample: 2067

Matrix: water

Date/Time Taken: 7/17/97 15:07

Date/Time Rec'd: 7/18/97 18:20

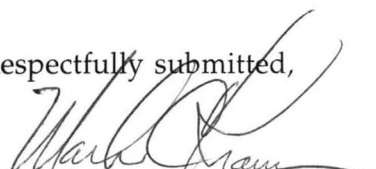
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Petroleum hydrocarbons	0.97	mg/L	0.2	418.1	7/31/97 16:30	LBK
Chloride	120	mg/L	0.05	300.1	8/13/97 9:30	LBK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Chloride	<0.05	0.18	20	108.7	108.9	75 - 125
Petroleum hydrocarbons	<2	0.00	48.4			

Respectfully submitted,


Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

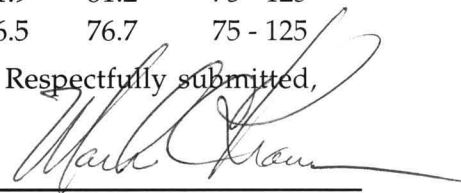
Report #: 27820**Project:** RRC Vernon Briggs**Sample:** 2068**Matrix:** water**Date/Time Taken:** 7/17/97 15:07**Date/Time Rec'd:** 7/18/97 18:20**Report of Laboratory Analysis**

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Barium	0.35	mg/L	0.0050	6010	8/17/97 14:02	MCK
Calcium	120	mg/L	0.050	6010	8/17/97 14:02	MCK
Magnesium	17	mg/L	0.050	6010	8/17/97 14:02	MCK
Potassium	3.3	mg/L	0.050	6010	8/17/97 14:02	MCK
Sodium	210	mg/L	0.050	6010	8/17/97 14:02	MCK
Strontium	1.1	mg/L	0.0050	6010	8/17/97 14:02	MCK
Alkalinity, total	240	mg/L	10	310.1	7/30/97 13:00	DLS
Bromide	<0.1	mg/L	0.1	300.1	8/5/97 9:00	DLS
Chloride	130	mg/L	0.05	300.1	8/5/97 9:00	DLS
Sulfate	18	mg/L	0.05	300.1	8/5/97 9:00	DLS

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Alkalinity, total	<10	18.18	10			
Barium	<0.005	9.88	20	96.2	106.2	75 - 125
Bromide	<0.1	0.27	20	107.9	108.2	75 - 125
Calcium	<0.05	2.91	20	83.5	81.1	75 - 125
Chloride	<0.05	0.55	20	77.9	78.3	75 - 125
Magnesium	<0.05	5.48	20	115.3	121.8	75 - 125
Potassium	<0.05	4.97	20	94.0	98.8	75 - 125
Sodium	<0.05	4.63	20	86.1	82.2	75 - 125
Strontium	<0.005	12.36	20	91.9	81.2	75 - 125
Sulfate	<0.05	0.24	20	76.5	76.7	75 - 125

Respectfully submitted,



Friday, August 15, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27821

Project: RRC Vernon Briggs

Sample: 2069

Matrix: water

Date/Time Taken: 7/17/97 15:07

Date/Time Rec'd: 7/18/97 18:20

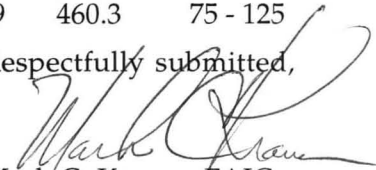
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Arsenic	0.0082	mg/L	0.005	6010	8/2/97 13:41	MCK
Barium	0.50	mg/L	0.001	6010	8/4/97 12:50	MCK
Cadmium	<0.005	mg/L	0.005	6010	8/2/97 12:34	MCK
Chromium	0.0092	mg/L	0.005	6010	8/1/97 17:21	MCK
Lead	0.037	mg/L	0.005	6010	8/1/97 16:20	MCK
Mercury	<0.0002	mg/L	0.0002	7470	8/2/97 14:23	MCK
Selenium	<0.005	mg/L	0.005	6010	8/2/97 15:32	MCK
Silver	<0.005	mg/L	0.005	6010	8/15/97 10:10	LBK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Arsenic	<0.005	7.40	20	85.7	92.1	75 - 125
Barium	<0.001	0.00	20	87.5	87.5	75 - 125
Cadmium	<0.005	5.12	20	104.6	99.3	75 - 125
Chromium	<0.005	1.27	20	101.6	102.9	75 - 125
Lead	<0.005	6.89	20	89.1	95.2	75 - 125
Mercury	<0.0002	8.45	20	109.6	100.6	75 - 125
Selenium	<0.005	14.28	20	87.1	99.5	75 - 125
Silver	<0.005	3.14	20	90.9	460.3	75 - 125

Respectfully submitted,


Mark C. Krause, FAIC

Thursday, August 14, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 512-471-0140

Report #: 27822

Report of Laboratory Analysis

Project: RRC Vernon Briggs

Sample: 2071

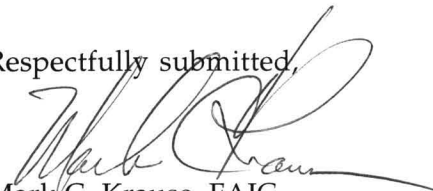
Matrix: water

Date/Time Taken: 7/17/97 15:36

Date/Time Rec'd: 7/18/97 18:20

Organic parameters follow this page

Respectfully submitted,


Mark C. Krause, FAIC

Project: RRC Vernon Briggs**Report #:** 27822**Sample:** 2071

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
1,1,1,2-tetrachloroethane	<5	µg/L	5	8260	7/31/97	9:12	KLM
1,1,1-trichloroethane	<5	µg/L	5	8260	7/31/97	9:12	KLM
1,1,2,2-tetrachloroethane	<5	µg/L	5	8260	7/31/97	9:12	KLM
1,1,2-trichloroethane	<5	µg/L	5	8260	7/31/97	9:12	KLM
1,1-dichloroethane	<5	µg/L	5	8260	7/31/97	9:12	KLM
1,1-dichloroethene	<5	µg/L	5	8260	7/31/97	9:12	KLM
1,2,3-trichloropropane	<5	µg/L	5	8260	7/31/97	9:12	KLM
1,2,4-trichlorobenzene	<5	µg/L	5	8260	7/31/97	9:12	KLM
1,2-dibromoethane	<5	µg/L	5	8260	7/31/97	9:12	KLM
1,2-dichlorobenzene	<5	µg/L	5	8260	7/31/97	9:12	KLM
1,2-dichloroethane	<5	µg/L	5	8260	7/31/97	9:12	KLM
1,2-dichloropropane	<5	µg/L	5	8260	7/31/97	9:12	KLM
1,3,5-trichlorobenzene	<5	µg/L	5	8260	7/31/97	9:12	KLM
1,3-dichlorobenzene	<5	µg/L	5	8260	7/31/97	9:12	KLM
1,4-dichlorobenzene	<5	µg/L	5	8260	7/31/97	9:12	KLM
2-butanone	<50	µg/L	50	8260	7/31/97	9:12	KLM
2-chlorotoluene	<5	µg/L	5	8260	7/31/97	9:12	KLM
2-Hexanone	<10	µg/L	10	8260	7/31/97	9:12	KLM
4-chlorotoluene	<5	µg/L	5	8260	7/31/97	9:12	KLM
4-methyl-2-pentanone	<10	µg/L	10	8260	7/31/97	9:12	KLM
Acetone	<50	µg/L	50	8260	7/31/97	9:12	KLM
Benzene	<5	µg/L	5	8260	7/31/97	9:12	KLM
Bromobenzene	<5	µg/L	5	8260	7/31/97	9:12	KLM
Bromodichloromethane	<5	µg/L	5	8260	7/31/97	9:12	KLM
Bromoform	<10	µg/L	10	8260	7/31/97	9:12	KLM
Bromomethane	<10	µg/L	10	8260	7/31/97	9:12	KLM
Carbon disulfide	<5	µg/L	5	8260	7/31/97	9:12	KLM
Carbon tetrachloride	<5	µg/L	5	8260	7/31/97	9:12	KLM
Chlorobenzene	<5	µg/L	5	8260	7/31/97	9:12	KLM
Chlorodibromomethane	<5	µg/L	5	8260	7/31/97	9:12	KLM
Chloroethane	<10	µg/L	10	8260	7/31/97	9:12	KLM
Chloroform	<5	µg/L	5	8260	7/31/97	9:12	KLM
Chloromethane	<10	µg/L	10	8260	7/31/97	9:12	KLM

cis-1,2-dichloroethene	<5	µg/L	5	8260	7/31/97	9:12	KLM
cis-1,3-dichloropropene	<5	µg/L	5	8260	7/31/97	9:12	KLM
Dibromomethane	<10	µg/L	10	8260	7/31/97	9:12	KLM
Dichlorodifluoromethane	<10	µg/L	10	8260	7/31/97	9:12	KLM
Ethylbenzene	<5	µg/L	5	8260	7/31/97	9:12	KLM
m,p-Xylenes	<5	µg/L	5	8260	7/31/97	9:12	KLM
Methylene chloride	<10	µg/L	10	8260	7/31/97	9:12	KLM
Naphthalene	26	µg/L	5	8260	7/31/97	9:12	KLM
o-Xylene	<5	µg/L	5	8260	7/31/97	9:12	KLM
Styrene	<5	µg/L	5	8260	7/31/97	9:12	KLM
Tetrachloroethene	<5	µg/L	5	8260	7/31/97	9:12	KLM
Toluene	<5	µg/L	5	8260	7/31/97	9:12	KLM
trans-1,2-dichloroethene	<5	µg/L	5	8260	7/31/97	9:12	KLM
trans-1,3-dichloropropene	<5	µg/L	5	8260	7/31/97	9:12	KLM
Trichloroethene	<5	µg/L	5	8260	7/31/97	9:12	KLM
Trichlorofluoromethane	<10	µg/L	10	8260	7/31/97	9:12	KLM
Vinyl chloride	<10	µg/L	10	8260	7/31/97	9:12	KLM

Project: RRC Vernon Briggs**Report #:** 27822**Sample:** 2071**Report of Laboratory Quality Assurance**

Surrogate	Method	Recovery	Limits
Toluene-d8	8260	104	86-114
Dibromofluoromethane	8260	97	76-121
Bromofluorobenzene	8260	101	85-117

Wednesday, August 13, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

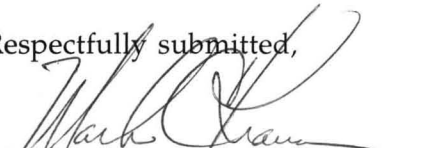
Report #: 27823**Project:** RRC Vernon Briggs**Sample:** 2072**Matrix:** water**Date/Time Taken:** 7/17/97 15:36**Date/Time Rec'd:** 7/18/97 18:20**Report of Laboratory Analysis**

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Petroleum hydrocarbons	0.90	mg/L	0.2	418.1	7/31/97 16:30	LBK
Chloride	120	mg/L	0.05	300.1	8/5/97 9:14	DLS

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Chloride	<0.05	0.55	20	77.9	78.3	75 - 125
Petroleum hydrocarbons	<2	0.00	48.4			

Respectfully submitted,


Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27824

Project: RRC Vernon Briggs

Sample: 2073

Matrix: water

Date/Time Taken: 7/17/97 15:36

Date/Time Rec'd: 7/18/97 18:20

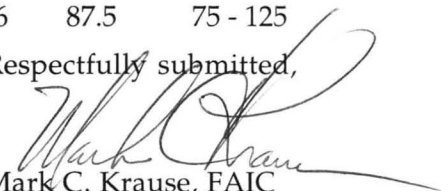
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Arsenic	<0.005	mg/L	0.005	6010	8/2/97 14:02	MCK
Barium	0.59	mg/L	0.001	6010	8/4/97 12:50	MCK
Cadmium	<0.005	mg/L	0.005	6010	8/2/97 12:38	MCK
Chromium	<0.005	mg/L	0.005	6010	8/1/97 17:21	MCK
Lead	0.048	mg/L	0.005	6010	8/1/97 16:20	MCK
Mercury	0.00030	mg/L	0.0002	7470	8/2/97 14:23	MCK
Selenium	<0.005	mg/L	0.005	6010	8/2/97 15:32	MCK
Silver	0.018	mg/L	0.01	6010	7/30/97 16:30	LBK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Arsenic	<0.005	8.62	20	120.9	110.5	75 - 125
Barium	<0.001	0.00	20	87.5	87.5	75 - 125
Cadmium	<0.005	0.00	20	93.4	93.4	75 - 125
Chromium	<0.005	1.27	20	101.6	102.9	75 - 125
Lead	<0.005	6.89	20	89.1	95.2	75 - 125
Mercury	<0.0002	8.45	20	109.6	100.6	75 - 125
Selenium	<0.005	14.28	20	87.1	99.5	75 - 125
Silver	<0.01	8.33	20	95.6	87.5	75 - 125

Respectfully submitted,


Mark C. Krause, FAIC

Tuesday, September 16, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

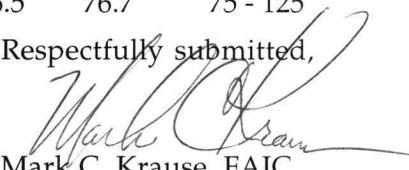
Report #: 27825**Project:** RRC Vernon Briggs**Sample:** 2074**Matrix:** water**Date/Time Taken:** 7/17/97 15:36**Date/Time Rec'd:** 7/18/97 18:20**Report of Laboratory Analysis**

Parameter	Result	Units	PQL	Method	Date/Time	Run	By	Blank
Barium	0.35	mg/L	0.0050	6010	8/17/97	14:07	MCK	
Calcium	110	mg/L	0.050	6010	8/17/97	14:07	MCK	
Magnesium	21	mg/L	0.050	6010	8/17/97	14:07	MCK	
Potassium	2.0	mg/L	0.050	6010	8/17/97	14:07	MCK	
Sodium	73	mg/L	0.1	6010	8/2/97	11:30	MCK	
Strontium	1.1	mg/L	0.0050	6010	8/17/97	14:07	MCK	
Alkalinity, total	280	mg/L	10	310.1	7/30/97	13:00	DLS	
Bromide	29	mg/L	1	300.1	8/5/97	9:21	DLS	
Chloride	470	mg/L	0.5	300.1	8/5/97	9:21	DLS	
Sulfate	45	mg/L	0.5	300.1	8/5/97	9:21	DLS	

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Alkalinity, total	<10	18.18	10			
Barium	<0.005	9.88	20	96.2	106.2	75 - 125
Bromide	<0.1	0.27	20	107.9	108.2	75 - 125
Calcium	<0.05	2.91	20	83.5	81.1	75 - 125
Chloride	<0.05	0.55	20	77.9	78.3	75 - 125
Magnesium	<0.05	5.48	20	115.3	121.8	75 - 125
Potassium	<0.05	4.97	20	94.0	98.8	75 - 125
Sodium	<0.05	4.63	20	86.1	82.2	75 - 125
Strontium	<0.005	12.36	20	91.9	81.2	75 - 125
Sulfate	<0.05	0.24	20	76.5	76.7	75 - 125

Respectfully submitted,


Mark C. Krause, FAIC

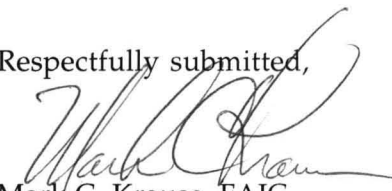
Monday, August 4, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 512-471-0140

Report #: 27826**Report of Laboratory Analysis****Project:** RRC Vernon Briggs**Sample:** 2076**Matrix:** water**Date/Time Taken:** 7/17/97 15:36**Date/Time Rec'd:** 7/18/97 18:20

Organic parameters follow this page

Respectfully submitted,


Mark C. Krause, FAIC

Project: RRC Vernon Briggs**Report #:** 27826**Sample:** 2076

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
1,1,1,2-tetrachloroethane	<5	µg/L	5	8260	7/31/97	9:32	KLM
1,1,1-trichloroethane	<5	µg/L	5	8260	7/31/97	9:32	KLM
1,1,2,2-tetrachloroethane	<5	µg/L	5	8260	7/31/97	9:32	KLM
1,1,2-trichloroethane	<5	µg/L	5	8260	7/31/97	9:32	KLM
1,1-dichloroethane	<5	µg/L	5	8260	7/31/97	9:32	KLM
1,1-dichloroethene	<5	µg/L	5	8260	7/31/97	9:32	KLM
1,2,3-trichloropropane	<5	µg/L	5	8260	7/31/97	9:32	KLM
1,2,4-trichlorobenzene	<5	µg/L	5	8260	7/31/97	9:32	KLM
1,2-dibromoethane	<5	µg/L	5	8260	7/31/97	9:32	KLM
1,2-dichlorobenzene	<5	µg/L	5	8260	7/31/97	9:32	KLM
1,2-dichloroethane	<5	µg/L	5	8260	7/31/97	9:32	KLM
1,2-dichloropropane	<5	µg/L	5	8260	7/31/97	9:32	KLM
1,3,5-trichlorobenzene	<5	µg/L	5	8260	7/31/97	9:32	KLM
1,3-dichlorobenzene	<5	µg/L	5	8260	7/31/97	9:32	KLM
1,4-dichlorobenzene	<5	µg/L	5	8260	7/31/97	9:32	KLM
2-butanone	<50	µg/L	50	8260	7/31/97	9:32	KLM
2-chlorotoluene	<5	µg/L	5	8260	7/31/97	9:32	KLM
2-Hexanone	<10	µg/L	10	8260	7/31/97	9:32	KLM
4-chlorotoluene	<5	µg/L	5	8260	7/31/97	9:32	KLM
4-methyl-2-pentanone	<10	µg/L	10	8260	7/31/97	9:32	KLM
Acetone	<50	µg/L	50	8260	7/31/97	9:32	KLM
Benzene	<5	µg/L	5	8260	7/31/97	9:32	KLM
Bromobenzene	<5	µg/L	5	8260	7/31/97	9:32	KLM
Bromodichloromethane	<5	µg/L	5	8260	7/31/97	9:32	KLM
Bromoform	<10	µg/L	10	8260	7/31/97	9:32	KLM
Bromomethane	<10	µg/L	10	8260	7/31/97	9:32	KLM
Carbon disulfide	<5	µg/L	5	8260	7/31/97	9:32	KLM
Carbon tetrachloride	<5	µg/L	5	8260	7/31/97	9:32	KLM
Chlorobenzene	<5	µg/L	5	8260	7/31/97	9:32	KLM
Chlorodibromomethane	<5	µg/L	5	8260	7/31/97	9:32	KLM
Chloroethane	<10	µg/L	10	8260	7/31/97	9:32	KLM
Chloroform	<5	µg/L	5	8260	7/31/97	9:32	KLM
Chloromethane	<10	µg/L	10	8260	7/31/97	9:32	KLM

cis-1,2-dichloroethene	<5	µg/L	5	8260	7/31/97	9:32	KLM
cis-1,3-dichloropropene	<5	µg/L	5	8260	7/31/97	9:32	KLM
Dibromomethane	<10	µg/L	10	8260	7/31/97	9:32	KLM
Dichlorodifluoromethane	<10	µg/L	10	8260	7/31/97	9:32	KLM
Ethylbenzene	<5	µg/L	5	8260	7/31/97	9:32	KLM
m,p-Xylenes	<5	µg/L	5	8260	7/31/97	9:32	KLM
Methylene chloride	<10	µg/L	10	8260	7/31/97	9:32	KLM
Naphthalene	<5	µg/L	5	8260	7/31/97	9:32	KLM
o-Xylene	<5	µg/L	5	8260	7/31/97	9:32	KLM
Styrene	<5	µg/L	5	8260	7/31/97	9:32	KLM
Tetrachloroethene	<5	µg/L	5	8260	7/31/97	9:32	KLM
Toluene	<5	µg/L	5	8260	7/31/97	9:32	KLM
trans-1,2-dichloroethene	<5	µg/L	5	8260	7/31/97	9:32	KLM
trans-1,3-dichloropropene	<5	µg/L	5	8260	7/31/97	9:32	KLM
Trichloroethene	<5	µg/L	5	8260	7/31/97	9:32	KLM
Trichlorofluoromethane	<10	µg/L	10	8260	7/31/97	9:32	KLM
Vinyl chloride	<10	µg/L	10	8260	7/31/97	9:32	KLM

Project: RRC Vernon Briggs**Report #:** 27826**Sample:** 2076**Report of Laboratory Quality Assurance**

Surrogate	Method	Recovery	Limits
Toluene-d8	8260	104	86-114
Dibromofluoromethane	8260	93	76-121
Bromofluorobenzene	8260	98	85-117

Wednesday, August 13, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

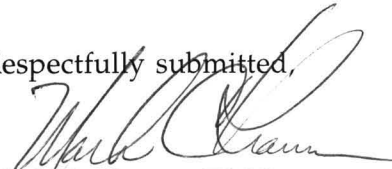
Report #: 27827**Project:** RRC Vernon Briggs**Sample:** 2077**Matrix:** water**Date/Time Taken:** 7/17/97 16:00**Date/Time Rec'd:** 7/18/97 18:20**Report of Laboratory Analysis**

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Petroleum hydrocarbons	0.25	mg/L	0.2	418.1	7/31/97 16:30	LBK
Chloride	130	mg/L	0.05	300.1	8/5/97 9:37	DLS

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Chloride	<0.05	0.55	20	77.9	78.3	75 - 125
Petroleum hydrocarbons	<2	0.00	48.4			

Respectfully submitted,


Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27828

Project: RRC Vernon Briggs

Sample: 2078

Matrix: water

Date/Time Taken: 7/17/97 16:00

Date/Time Rec'd: 7/18/97 18:20

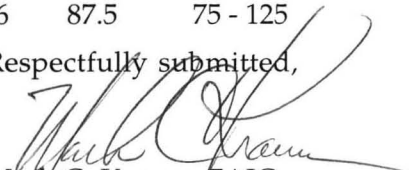
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Arsenic	0.012	mg/L	0.005	6010	8/2/97 14:02	MCK
Barium	0.42	mg/L	0.001	6010	8/4/97 12:50	MCK
Cadmium	<0.005	mg/L	0.005	6010	8/2/97 12:38	MCK
Chromium	<0.005	mg/L	0.005	6010	8/1/97 17:21	MCK
Lead	0.041	mg/L	0.005	6010	8/1/97 16:20	MCK
Mercury	<0.0002	mg/L	0.0002	7470	8/2/97 14:23	MCK
Selenium	<0.005	mg/L	0.005	6010	8/2/97 15:59	MCK
Silver	<0.01	mg/L	0.01	6010	7/30/97 16:30	LBK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Arsenic	<0.005	8.62	20	120.9	110.5	75 - 125
Barium	<0.001	0.00	20	87.5	87.5	75 - 125
Cadmium	<0.005	0.00	20	93.4	93.4	75 - 125
Chromium	<0.005	1.27	20	101.6	102.9	75 - 125
Lead	<0.005	6.89	20	89.1	95.2	75 - 125
Mercury	<0.0002	8.45	20	109.6	100.6	75 - 125
Selenium	<0.005	11.42	20	108.8	96.4	75 - 125
Silver	<0.01	8.33	20	95.6	87.5	75 - 125

Respectfully submitted,


Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27829

Project: RRC Vernon Briggs

Sample: 2079

Matrix: water

Date/Time Taken: 7/17/97 16:00

Date/Time Rec'd: 7/18/97 18:20

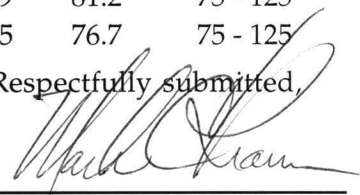
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Barium	0.31	mg/L	0.0050	6010	8/17/97 14:11	MCK
Calcium	51	mg/L	0.050	6010	8/17/97 14:11	MCK
Magnesium	9.7	mg/L	0.050	6010	8/17/97 14:11	MCK
Potassium	1.4	mg/L	0.050	6010	8/17/97 14:11	MCK
Sodium	280	mg/L	0.050	6010	8/17/97 14:11	MCK
Strontium	0.67	mg/L	0.0050	6010	8/17/97 14:11	MCK
Alkalinity, total	230	mg/L	10	310.1	7/30/97 13:00	DLS
Bromide	<0.1	mg/L	0.1	300.1	8/5/97 9:52	DLS
Chloride	130	mg/L	0.05	300.1	8/5/97 9:52	DLS
Sulfate	2.4	mg/L	0.05	300.1	8/5/97 9:52	DLS

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Alkalinity, total	<10	18.18	10			
Barium	<0.005	9.88	20	96.2	106.2	75 - 125
Bromide	<0.1	0.27	20	107.9	108.2	75 - 125
Calcium	<0.05	2.91	20	83.5	81.1	75 - 125
Chloride	<0.05	0.55	20	77.9	78.3	75 - 125
Magnesium	<0.05	5.48	20	115.3	121.8	75 - 125
Potassium	<0.05	4.97	20	94.0	98.8	75 - 125
Sodium	<0.05	4.63	20	86.1	82.2	75 - 125
Strontium	<0.005	12.36	20	91.9	81.2	75 - 125
Sulfate	<0.05	0.24	20	76.5	76.7	75 - 125

Respectfully submitted,



ChemSOLVE

11629 Manchaca Road

Austin, Texas 78748

Phone: 512-280-7680 FAX: 512-280-7651

Email: Chemsolve@aol.com

WWW: <http://www.eden.com/~chemsol/>

REPORT TO:

CONTACT DR JERI SULLIVAN

COMPANY BEG UT AUSTIN

ADDRESS

PHONE 471 6285 FAX 471-0140

BILL TO:

CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD

Page of

Project Name: RRC Verrion Buggs

Analytical Request:

Project No.:

Turnaround: ASAP

Sample ID	Date	Time	No. of Cont.	Matrix	VOC	TPH	Chloride	Pcras	Metals	Cations	Anions	Lab Number	Comments
2081	7/17/97	1927	2	140	X							✓ 27812-W	Hurley
2082		1927	1			X	X					✓ 27813-W	Hurley
2083		1927	1					X				✓ 27814-W	Hurley
2084		1927	1						X	X		27815-W	Hurley
2048	7/18/97	1030	1			X	X					✓ 27816-W	SW North
2049			1					X				✓ 27817-W	SW North
2050			2						X	X		27818-W	SW North
													SW North

Relinquished By

Date

Time

Received By

Carrier

Date

Time

<u>[Signature]</u>	7/18/97	1820	<u>[Signature]</u>	HIS	6:20	7/18

Send plastic containers back

Monday, August 4, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 512-471-0140

Report #: 27812

Report of Laboratory Analysis

Project: RRC Vernon Briggs

Sample: 2081

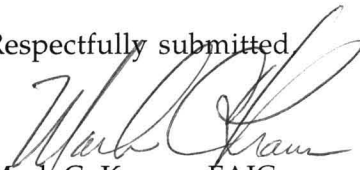
Matrix: water

Date/Time Taken: 7/17/97 19:27

Date/Time Rec'd: 7/18/97 18:20

Organic parameters follow this page

Respectfully submitted,


Mark C. Krause, FAIC

Project: RRC Vernon Briggs**Report #:** 27812**Sample:** 2081

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
1,1,1,2-tetrachloroethane	<5	µg/L	5	8260	7/31/97	8:51	KLM
1,1,1-trichloroethane	<5	µg/L	5	8260	7/31/97	8:51	KLM
1,1,2,2-tetrachloroethane	<5	µg/L	5	8260	7/31/97	8:51	KLM
1,1,2-trichloroethane	<5	µg/L	5	8260	7/31/97	8:51	KLM
1,1-dichloroethane	<5	µg/L	5	8260	7/31/97	8:51	KLM
1,1-dichloroethene	<5	µg/L	5	8260	7/31/97	8:51	KLM
1,2,3-trichloropropane	<5	µg/L	5	8260	7/31/97	8:51	KLM
1,2,4-trichlorobenzene	<5	µg/L	5	8260	7/31/97	8:51	KLM
1,2-dibromoethane	<5	µg/L	5	8260	7/31/97	8:51	KLM
1,2-dichlorobenzene	<5	µg/L	5	8260	7/31/97	8:51	KLM
1,2-dichloroethane	<5	µg/L	5	8260	7/31/97	8:51	KLM
1,2-dichloropropane	<5	µg/L	5	8260	7/31/97	8:51	KLM
1,3,5-trichlorobenzene	<5	µg/L	5	8260	7/31/97	8:51	KLM
1,3-dichlorobenzene	<5	µg/L	5	8260	7/31/97	8:51	KLM
1,4-dichlorobenzene	<5	µg/L	5	8260	7/31/97	8:51	KLM
2-butanone	<50	µg/L	50	8260	7/31/97	8:51	KLM
2-chlorotoluene	<5	µg/L	5	8260	7/31/97	8:51	KLM
2-Hexanone	<10	µg/L	10	8260	7/31/97	8:51	KLM
4-chlorotoluene	<5	µg/L	5	8260	7/31/97	8:51	KLM
4-methyl-2-pentanone	<10	µg/L	10	8260	7/31/97	8:51	KLM
Acetone	<50	µg/L	50	8260	7/31/97	8:51	KLM
Benzene	<5	µg/L	5	8260	7/31/97	8:51	KLM
Bromobenzene	<5	µg/L	5	8260	7/31/97	8:51	KLM
Bromodichloromethane	<5	µg/L	5	8260	7/31/97	8:51	KLM
Bromoform	<10	µg/L	10	8260	7/31/97	8:51	KLM
Bromomethane	<10	µg/L	10	8260	7/31/97	8:51	KLM
Carbon disulfide	<5	µg/L	5	8260	7/31/97	8:51	KLM
Carbon tetrachloride	<5	µg/L	5	8260	7/31/97	8:51	KLM
Chlorobenzene	<5	µg/L	5	8260	7/31/97	8:51	KLM
Chlorodibromomethane	<5	µg/L	5	8260	7/31/97	8:51	KLM
Chloroethane	<10	µg/L	10	8260	7/31/97	8:51	KLM
Chloroform	<5	µg/L	5	8260	7/31/97	8:51	KLM
Chloromethane	<10	µg/L	10	8260	7/31/97	8:51	KLM

cis-1,2-dichloroethene	<5	µg/L	5	8260	7/31/97	8:51	KLM
cis-1,3-dichloropropene	<5	µg/L	5	8260	7/31/97	8:51	KLM
Dibromomethane	<10	µg/L	10	8260	7/31/97	8:51	KLM
Dichlorodifluoromethane	<10	µg/L	10	8260	7/31/97	8:51	KLM
Ethylbenzene	<5	µg/L	5	8260	7/31/97	8:51	KLM
m,p-Xylenes	<5	µg/L	5	8260	7/31/97	8:51	KLM
Methylene chloride	<10	µg/L	10	8260	7/31/97	8:51	KLM
Naphthalene	<5	µg/L	5	8260	7/31/97	8:51	KLM
o-Xylene	<5	µg/L	5	8260	7/31/97	8:51	KLM
Styrene	<5	µg/L	5	8260	7/31/97	8:51	KLM
Tetrachloroethene	<5	µg/L	5	8260	7/31/97	8:51	KLM
Toluene	<5	µg/L	5	8260	7/31/97	8:51	KLM
trans-1,2-dichloroethene	<5	µg/L	5	8260	7/31/97	8:51	KLM
trans-1,3-dichloropropene	<5	µg/L	5	8260	7/31/97	8:51	KLM
Trichloroethene	<5	µg/L	5	8260	7/31/97	8:51	KLM
Trichlorofluoromethane	<10	µg/L	10	8260	7/31/97	8:51	KLM
Vinyl chloride	<10	µg/L	10	8260	7/31/97	8:51	KLM

Project: RRC Vernon Briggs**Report #:** 27812**Sample:** 2081**Report of Laboratory Quality Assurance**

Surrogate	Method	Recovery	Limits
Toluene-d8	8260	103	86-114
Dibromofluoromethane	8260	82	76-121
Bromofluorobenzene	8260	96	85-117

Friday, August 15, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27813

Project: RRC Vernon Briggs

Sample: 2082

Matrix: water

Date/Time Taken: 7/17/97 19:27

Date/Time Rec'd: 7/18/97 18:20

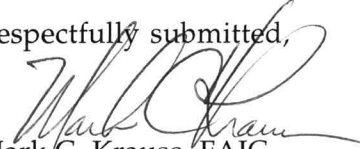
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Petroleum hydrocarbons	<0.2	mg/L	0.2	418.1	7/31/97	16:30	LBK
Chloride	98	mg/L	0.05	300.1	8/13/97	9:23	LBK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Chloride	<0.05	0.18	20	108.7	108.9	75 - 125
Petroleum hydrocarbons	<2	0.00	48.4			

Respectfully submitted,


Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27814

Project: RRC Vernon Briggs

Sample: 2083

Matrix: water

Date/Time Taken: 7/17/97 19:27

Date/Time Rec'd: 7/18/97 18:20

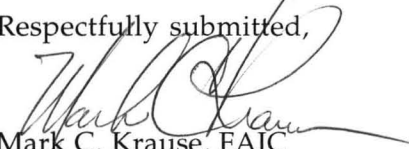
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Arsenic	0.015	mg/L	0.005	6010	8/2/97 13:41	MCK
Barium	0.69	mg/L	0.001	6010	8/4/97 12:47	MCK
Cadmium	<0.005	mg/L	0.005	6010	8/2/97 12:34	MCK
Chromium	<0.005	mg/L	0.005	6010	8/1/97 17:21	MCK
Lead	0.032	mg/L	0.005	6010	8/1/97 16:20	MCK
Mercury	<0.0002	mg/L	0.0002	7470	7/30/97 14:00	LBK
Selenium	<0.005	mg/L	0.005	6010	8/2/97 15:32	MCK
Silver	<0.01	mg/L	0.01	6010	7/30/97 15:20	LBK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Arsenic	<0.005	7.40	20	85.7	92.1	75 - 125
Barium	<0.001	8.57	20	88.8	96.4	75 - 125
Cadmium	<0.005	5.12	20	104.6	99.3	75 - 125
Chromium	<0.005	1.27	20	101.6	102.9	75 - 125
Lead	<0.005	6.89	20	89.1	95.2	75 - 125
Mercury	<0.0002	12.03	20	105.0	118	75 - 125
Selenium	<0.005	14.28	20	87.1	99.5	75 - 125
Silver	<0.01	4.21	20	82.5	78.9	75 - 125

Respectfully submitted,


Mark C. Krause, FAIC

Tuesday, September 16, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27815

Project: RRC Vernon Briggs

Sample: 2084

Matrix: water

Date/Time Taken: 7/18/97 19:27

Date/Time Rec'd: 7/18/97 18:20

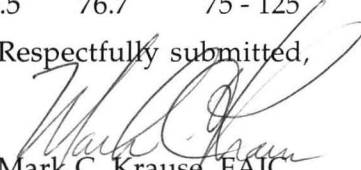
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time	Run	By	Blank
Barium	0.29	mg/L	0.0050	6010	8/17/97	13:53	MCK	
Calcium	31	mg/L	0.050	6010	8/17/97	13:53	MCK	
Magnesium	12	mg/L	0.050	6010	8/17/97	13:53	MCK	
Potassium	2.0	mg/L	0.050	6010	8/17/97	13:53	MCK	
Sodium	100	mg/L	0.1	6010	8/2/97	11:30	MCK	
Strontium	0.63	mg/L	0.0050	6010	8/17/97	13:53	MCK	
Alkalinity, total	180	mg/L	10	310.1	7/30/97	13:00	DLS	
Bromide	<0.1	mg/L	0.1	300.1	8/5/97	8:11	DLS	
Chloride	100	mg/L	0.05	300.1	8/5/97	8:11	DLS	
Sulfate	4.8	mg/L	0.05	300.1	8/5/97	8:11	DLS	

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Alkalinity, total	<10	18.18	10			
Barium	<0.005	9.88	20	96.2	106.2	75 - 125
Bromide	<0.1	0.27	20	107.9	108.2	75 - 125
Calcium	<0.05	2.91	20	83.5	81.1	75 - 125
Chloride	<0.05	0.55	20	77.9	78.3	75 - 125
Magnesium	<0.05	5.48	20	115.3	121.8	75 - 125
Potassium	<0.05	4.97	20	94.0	98.8	75 - 125
Sodium	<0.05	4.63	20	86.1	82.2	75 - 125
Strontium	<0.005	12.36	20	91.9	81.2	75 - 125
Sulfate	<0.05	0.24	20	76.5	76.7	75 - 125

Respectfully submitted,


Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27816

Project: RRC Vernon Briggs

Sample: 2048

Matrix: water

Date/Time Taken: 7/18/97 10:30

Date/Time Rec'd: 7/18/97 18:20

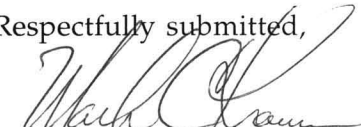
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Petroleum hydrocarbons	0.50	mg/L	0.2	418.1	7/31/97	16:30	LBK
Chloride	110	mg/L	0.5	300.1	8/5/97	8:17	DLS

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Chloride	<0.05	0.55	20	77.9	78.3	75 - 125
Petroleum hydrocarbons	<2	0.00	48.4			

Respectfully submitted,


Mark C. Krause, FAIC

Monday, August 4, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

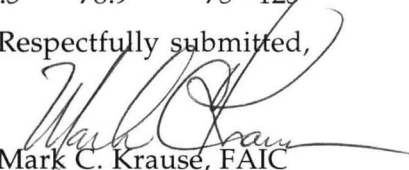
Report #: 27817**Project:** RRC Vernon Briggs**Sample:** 2049**Matrix:** water**Date/Time Taken:** 7/18/97 10:30**Date/Time Rec'd:** 7/18/97 18:20**Report of Laboratory Analysis**

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Arsenic	0.021	mg/L	0.005	6010	8/2/97 13:41	MCK
Barium	0.31	mg/L	0.001	6010	8/4/97 12:47	MCK
Cadmium	<0.005	mg/L	0.005	6010	8/2/97 12:34	MCK
Chromium	<0.005	mg/L	0.005	6010	8/1/97 17:21	MCK
Lead	0.016	mg/L	0.005	6010	8/1/97 16:20	MCK
Mercury	0.0010	mg/L	0.0002	7470	7/30/97 14:00	LBK
Selenium	<0.005	mg/L	0.005	6010	8/2/97 15:32	MCK
Silver	0.014	mg/L	0.01	6010	7/30/97 15:20	LBK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Arsenic	<0.005	7.40	20	85.7	92.1	75 - 125
Barium	<0.001	8.57	20	88.8	96.4	75 - 125
Cadmium	<0.005	5.12	20	104.6	99.3	75 - 125
Chromium	<0.005	1.27	20	101.6	102.9	75 - 125
Lead	<0.005	6.89	20	89.1	95.2	75 - 125
Mercury	<0.0002	12.03	20	105.0	118	75 - 125
Selenium	<0.005	14.28	20	87.1	99.5	75 - 125
Silver	<0.01	4.21	20	82.5	78.9	75 - 125

Respectfully submitted,


Mark C. Krause, FAIC

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 27818

Project: RRC Vernon Briggs

Sample: 2050

Matrix: water

Date/Time Taken: 7/18/97 10:30

Date/Time Rec'd: 7/18/97 18:20

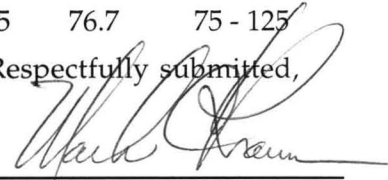
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Barium	0.37	mg/L	0.0050	6010	8/17/97 13:57	MCK
Calcium	140	mg/L	0.050	6010	8/17/97 13:57	MCK
Magnesium	24	mg/L	0.050	6010	8/17/97 13:57	MCK
Potassium	5.6	mg/L	0.050	6010	8/17/97 13:57	MCK
Sodium	210	mg/L	0.050	6010	8/17/97 13:57	MCK
Strontium	0.96	mg/L	0.0050	6010	8/17/97 13:57	MCK
Alkalinity, total	180	mg/L	10	310.1	7/30/97 13:00	DLS
Bromide	16	mg/L	0.1	300.1	8/5/97 8:38	DLS
Chloride	130	mg/L	0.05	300.1	8/5/97 8:38	DLS
Sulfate	140	mg/L	0.05	300.1	8/5/97 8:38	DLS

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Alkalinity, total	<10	18.18	10			
Barium	<0.005	9.88	20	96.2	106.2	75 - 125
Bromide	<0.1	0.27	20	107.9	108.2	75 - 125
Calcium	<0.05	2.91	20	83.5	81.1	75 - 125
Chloride	<0.05	0.55	20	77.9	78.3	75 - 125
Magnesium	<0.05	5.48	20	115.3	121.8	75 - 125
Potassium	<0.05	4.97	20	94.0	98.8	75 - 125
Sodium	<0.05	4.63	20	86.1	82.2	75 - 125
Strontium	<0.005	12.36	20	91.9	81.2	75 - 125
Sulfate	<0.05	0.24	20	76.5	76.7	75 - 125

Respectfully submitted,



(THIS SPACE FOR LAB USE ONLY)

Account No. _____ Lab No. 97-04646

Date Reported 7-19-97 Date Received 7-18-97 ca 2:20

☐ UNSUITABLE FOR ANALYSIS-PLEASE RESUBMIT:

☐ Heavy Bacterial Growth (Possibly compromising results)	☐ Excessive Chlorine	TEST PERFORMED ☒ TSS ☐ M-FC ☒ PIA ☐ SPC
☐ TNTC (>200 colonies)	☐ Excessive Silt	
☐ Confluent Growth	☐ Sample Too Old	
	☐ Insufficient Volume	
	☐ Other (See Below)	TECH <u>ca</u>

COLIFORM ORGANISMS:

Not Found (-) ☒ Found (+) ☐ Total ☐
E. coli ☐

*WATER OF SATISFACTORY BACTERIOLOGICAL QUALITY MUST BE FREE OF COLIFORM ORGANISMS.

PLEASE PRINT OR TYPE ALL INFORMATION IN BLACK INK

Name of System or Address of Well BROOKER County Source is Located MATAGORDA

Point of Collection WELL Your Initials SA Date 7-17-97 Time AM/PM 3:10

Send report to: NAME E. J. SULLIVAN

STREET UNIVERSITY STATION BOX X

CITY AUSTIN TEXAS 78713-8924
(Zip Code)

PHONE 512-471-6285

Water System Identification Number _____

TYPE OF SYSTEM:		SAMPLE IS:	WATER SOURCE:
☐ Public	☐ Bottled Water	Public Systems Only	☒ Well
☐ Dairy	☐ Swimming Pool	☐ Distribution ☐ Repeat	Well Depth _____
☐ School	☒ Individual	☐ Raw ☐ Special	☐ Other _____
		☐ Construction	

Total samples collected on this date 1 Chlorine residual _____

STATE CERTIFIED WATER LABORATORY I.D.# 48006
BRAZORIA COUNTY HEALTH DEPARTMENT
434 E. MULBERRY, ANGLETON, TEXAS 77516
409/449-5711, Ext 1620 409/205-4261, Ext 1620 281/331-6101, Ext 1620 FAX 409/449-1670

Revised: 1/97

WATER BACTERIOLOGY

(THIS SPACE FOR LAB USE ONLY)

97-04647

Account No. _____

Lab No. _____

Date Reported

7-19-99

Date Received

7-18-99 2:20 PM

☐ UNSUITABLE FOR ANALYSIS-PLEASE RESUBMIT:

- ☐ Heavy Bacterial Growth
 (Possibly compromising results)
☐ TNTC (> 200 colonies)
☐ Confluent Growth
- ☐ Excessive Chlorine
☐ Excessive Silt
☐ Sample Too Old
☐ Insufficient Volume
☐ Other (See Below)

TEST PERFORMED

- ☐ MP ☐ MFC
☒ PCA ☐ SPC

TECH

Ca

COLIFORM ORGANISMS:

Not Found ☒Found (+) ☐Total ☐E. coli ☐

*WATER OF SATISFACTORY BACTERIOLOGICAL QUALITY MUST BE FREE OF COLIFORM ORGANISMS.

PLEASE PRINT OR TYPE ALL INFORMATION IN BLACK INK

TRAILER #2075

Name of System or Address of Well

MATAGORDA

County Source is Located

N. SIDE OF TRAILER #4A

Point of Collection

Your Initials

7-17-97

Date

3:40

Time AM/PM

Send report to:

NAME

E.J. SULLIVAN

STREET

UNIVERSITY STATION BOX X

CITY

AUSTIN

TEXAS

78713-8924

(Zip Code)

PHONE

512-471-6285

Water System Identification Number _____

TYPE OF SYSTEM:

- ☐ Public ☐ Bottled Water
☐ Dairy ☐ Swimming Pool
☐ School ☒ Individual

SAMPLES:

(Public Systems Only)

- ☐ Distribution ☐ Repeat
☐ Raw ☐ Special
☐ Construction

WATER SOURCE:

- ☐ Well
 Well Depth _____
☐ Other _____

Total samples collected on this date _____

Chlorine residual _____

STATE CERTIFIED WATER LABORATORY I.D.# 48906

BRAZORIA COUNTY HEALTH DEPARTMENT

434 E. MULBERRY, ANGLETON, TEXAS 77516

409/409-5711, Ext 1828 409/265-4261, Ext 1628 281/331-5191, Ext 1828 FAX 409/409-1570

Revised: 1/97

WATER BACTERIOLOGY

(THIS SPACE FOR LAB USE ONLY)

97-04648

Account No. _____

Lab No. _____

Date Reported

7-19-97

Date Received

7-18-97 2:20 PM

☐ UNSUITABLE FOR ANALYSIS-PLEASE RESUBMIT:

- ☐ Heavy Bacterial Growth
☐ Possibly compromising results
☐ TNTC (>200 colonies)
☐ Confluent Growth
- ☐ Excessive Chlorine
☐ Excessive Silt
☐ Sample Too Old
☐ Insufficient Volume
☐ Other (See Below)

TEST PERFORMED

- ☐ MF ☐ MFC
☒ PIA ☐ SPC

TECH

Ca

COLIFORM ORGANISMS:

Not Found (-) ☒Found (+) ☐Total ☐E. coli ☐

*WATER OF SATISFACTORY BACTERIOLOGICAL QUALITY MUST BE FREE OF COLIFORM ORGANISMS.

PLEASE PRINT OR TYPE ALL INFORMATION IN BLACK INK

HURLEY

Name of System or Address of Well

MATAGORDA

County Source is Located

INSIDE TAP

Point of Collection

J.S.

Your Initials

7/17/97

Date

18:30

Time AM/PM

Send report to:

NAME

Dr. JERI Sullivan

STREET

Bureau of Economic Geol. Univ. Station Box X

CITY

AUSTIN

TEXAS

78713

(Zip Code)

PHONE

512 471 6285

Water System Identification Number _____

TYPE OF SYSTEM:

- ☐ Public ☐ Bottled Water
☐ Dairy ☐ Swimming Pool
☐ School ☒ Individual

SAMPLE IS:

(Public Systems Only)

- ☐ Distribution ☐ Repeat
☐ Raw ☐ Special
☐ Construction

WATER SOURCE:

- ☒ Well
 Well Depth _____
☐ Other _____

Total samples collected on this date

1

Chlorine residual

STATE CERTIFIED WATER LABORATORY I.D.# 48886

BRAZORIA COUNTY HEALTH DEPARTMENT

434 E. MULBERRY, ANGLETON, TEXAS 77515

409/848-5711, Ext 1628 409/265-4261, Ext 1628 281/331-8181, Ext 1628 FAX 409/848-1878

Revised: 1/97

WATER BACTERIOLOGY

(THIS SPACE FOR LAB USE ONLY)

Account No. _____

Lab No. _____

97-04650

Date Reported 7-19-97Date Received 7-18-97 ^{ca} 2:20☐ UNSUITABLE FOR ANALYSIS-PLEASE RESUBMIT:☐ Heavy Bacterial Growth

(Possibly compromising results)

☐ TNTC (> 200 colonies)☐ Confluent Growth☐ Excessive Chlorine☐ Excessive Silt☐ Sample Too Old☐ Insufficient Volume☐ Other (See Below)

TEST PERFORMED

☐ MP☐ M-FC☒ FIA☐ SPCTECH Ca

COLIFORM ORGANISMS:

Not Found ☒Found (+) ☐Total ☐E. coli ☐

*WATER OF SATISFACTORY BACTERIOLOGICAL QUALITY MUST BE FREE OF COLIFORM ORGANISMS.

PLEASE PRINT OR TYPE ALL INFORMATION IN BLACK INK

Name of System or Address of Well DALE HALEPOVE HCounty Source is Located MATAGORDAPoint of Collection WELLYour Initials SLADate 7-17-97Time AM/PM 2:45

Send report to:

NAME

E. J. SULLIVAN#2065 1st sample

STREET

UNIVERSITY STATION - BOX X

CITY

AUSTIN

TEXAS

78713-8984

(Zip Code)

PHONE

512-471-6285

Water System Identification Number _____

TYPE OF SYSTEM:

☐ Public☐ Bottled Water☐ Dairy☐ Swimming Pool☐ School☒ Individual

SAMPLE IS:

(Public Systems Only)

☐ Distribution☐ Repeat☐ Raw☐ Special☐ Construction

WATER SOURCE:

☒ Well

Well Depth _____

☐ Other _____Total samples collected on this date 1

Chlorine residual _____

STATE CERTIFIED WATER LABORATORY, I.D.# 48986

BRAZORIA COUNTY HEALTH DEPARTMENT

434 E. HULBERRY, ANGLETON, TEXAS 77516

409/449-5711, Ext 1628 409/295-4261, Ext 1628 281/331-6101, Ext 1630 FAX 409/449-1670

Revised: 1/97

WATER BACTERIOLOGY

(THIS SPACE FOR LAB USE ONLY)

97-04649

Account No. _____

Lab No. _____

Date Reported 7-19-97Date Received 7-18-97 ^{Ca} 2:20☐ UNSUITABLE FOR ANALYSIS—PLEASE RESUBMIT:

- | | |
|--|--|
| ☐ Heavy Bacterial Growth
(Possibly compromising results) | ☐ Excessive Chlorine |
| ☐ TNTC (>200 colonies) | ☐ Excessive Silt |
| ☐ Confluent Growth | ☐ Sample Too Old |
| | ☐ Insufficient Volume |
| | ☐ Other (See Below) |

TEST PERFORMED

- | | |
|---|-------------------------------|
| ☐ MP | ☐ M-FC |
| ☒ PIA | ☐ SPC |

COLIFORM ORGANISMS:

Not Found (☒)Found (+) ☐Total ☐E. coli ☐TECH Ca

*WATER OF SATISFACTORY BACTERIOLOGICAL QUALITY MUST BE FREE OF COLIFORM ORGANISMS.

PLEASE PRINT OR TYPE ALL INFORMATION IN BLACK INK

SHELTON#2080MATAGORDA

Name of System or Address of Well

County Source is Located

YARDJS7-17-974:00

Point of Collection

Your Initials

Date

Time AM/PM

Send report to:

NAME

E. J. SULLIVAN

STREET

UNIVERSITY STATION Box X

CITY

AUSTIN

TEXAS

78713-8924

PHONE

512-471-6285

(Zip Code)

Water System Identification Number _____

TYPE OF SYSTEM:

- | | |
|---------------------------------|--|
| ☐ Public | ☐ Bottled Water |
| ☐ Dairy | ☐ Swimming Pool |
| ☐ School | ☒ Individual |

SAMPLE IS:

(Public Systems Only)

- | | |
|---------------------------------------|----------------------------------|
| ☐ Distribution | ☐ Repeat |
| ☐ Raw | ☐ Special |
| ☐ Construction | |

WATER SOURCE:

- | |
|--------------------------------------|
| ☐ Well |
| Well Depth <u>348'</u> |
| ☐ Other _____ |

Total samples collected on this date 1

Chlorine residual _____

STATE CERTIFIED WATER LABORATORY I.D.# 48806

BRAZOSHA COUNTY HEALTH DEPARTMENT

434 E. MULBERRY, ANGLETON, TEXAS 77516

409/408-5711, Ext 1628 409/295-4261, Ext 1628 281/331-6101, Ext 1628 FAX 409/408-1678

Revised: 1/97

167

ChemSOLVE

11629 Manchaca Road

Austin, Texas 78748

Phone: 512-280-7680 FAX: 512-280-7651

Email: Chemsolve@aol.com

WWW: <http://www.eden.com/~chemsolve/>

REPORT TO:

CONTACT JERI SULLIVAN

COMPANY BEG UT AUSTIN

ADDRESS

PHONE 471 6285 FAX 471-0140

BILL TO:

CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD

Page of

Project Name:

Project No.:

Turnaround: ASAP

Analytical Request:

* Cation: Ca^{2+} , Mg^{2+} , Na^+
 K^+ , Sr^{2+} , Ba^{2+}
 ** Anion: Cl^- , SO_4^{2-} , Br^-

Sample ID	Date	Time	No. of Cont.	Matrix	CATIONS*	ANIONS**	SUOCIPAH	VOE	PERA-8 METALS								Lab Number	Comments
✓ 2086	8/1/97	1100	1	HO	X												28082V	VB MW 2A
✓ 2087	"	1100	1	"		X											28083V	VB MW 2B
✓ 2088	"	1154	1	"			X										28084V	VB MW 2C
✓ 2089	"	1154	2	"				X									28085V	VB MW 2D
✓ 2090	"	1100	1	"													28086V	VB MW 2E
✓ 2091	8/1/97	1310	1	"	X												28087V	VB MW 3A
✓ 2092	8/1/97	1310	1	"		X											28088V	VB MW 3B
✓ 2093	8/1/97	13:20	1	"			X										28089V	VB MW 3C
✓ 2094	8/1/97	13:20	2	"				X									28090V	VB MW 3D
✓ 2095	8/1/97	1310	1	"					X								28091V	VB MW 3E
✓ 2096	8/1/97	1546			X												28092V	VB MW 1A

(X) - note: not acidified

Relinquished By

Date

Time

Received By

Carrier

Date

Time

<u>Alan R. Dutton</u>	<u>8/4/97</u>	<u>10:50</u>	<u>Angie O'Rourke</u>	<u>PRIOBL</u>	<u>8/4/97</u>	<u>1:00</u>

ChemSOLVE

11629 Manchaca Road

Austin, Texas 78748

Phone: 512-280-7680 FAX: 512-280-7651

Email: Chemsolve@aol.com

WWW: <http://www.eden.com/~chemsolv/>

REPORT TO:

CONTACT *JERI SULLIVAN*

COMPANY *BEG UT AUSTIN*

ADDRESS

PHONE *471 6285* FAX *471-0140*

BILL TO:

CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD

Page of

Project Name:

Analytical Request:

Project No.:

Turnaround: *ASAP*

Sample ID	Date	Time	No. of Cont.	Matrix	Cations	Anions	PAH & 270 SVOC	VOC	PCRA-8 METALS									Lab Number	Comments
<i>20972098</i>	<i>8/1/97</i>	<i>1546</i>	<i>1</i>	<i>1620</i>		<i>X</i>												<i>28093</i> ✓	<i>VBMWIB</i>
<i>20982099</i>	<i>8/1/97</i>	<i>1640</i>	<i>1</i>	<i>"</i>			<i>X</i>											<i>28094</i>	<i>VBMWIC</i>
<i>20992100</i>	<i>8/1/97</i>	<i>1640</i>	<i>2</i>	<i>"</i>				<i>X</i>										<i>28095</i> ✓	<i>VBMWID</i>
<i>21002101</i>	<i>8/1/97</i>	<i>1546</i>	<i>1</i>	<i>"</i>					<i>X</i>									<i>28096</i> ✓	<i>VBMWIE</i>

Relinquished By

Date

Time

Received By

Carrier

Date / Time

<i>Alan R Dutton</i>	<i>8/4/97</i>	<i>10:50</i>	<i>Angie Ornela</i>	<i>pridel</i>	<i>8/4/97</i>	<i>12:00</i>

Monday, August 18, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

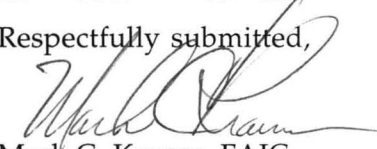
Report #: 28082**Project:** Vernon Briggs**Sample:** 2086**Matrix:** water**Date/Time Taken:** 8/1/97 11:00**Date/Time Rec'd:** 8/4/97 13:00**Report of Laboratory Analysis**

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Barium	0.31	mg/L	0.0050	6010	8/18/97 1:09	MCK
Calcium	170	mg/L	0.050	6010	8/18/97 1:09	MCK
Magnesium	65	mg/L	0.050	6010	8/18/97 1:09	MCK
Potassium	4.7	mg/L	0.050	6010	8/18/97 1:09	MCK
Sodium	550	mg/L	0.050	6010	8/18/97 1:09	MCK
Strontium	0.84	mg/L	0.0050	6010	8/18/97 1:09	MCK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Barium	<0.005	15.43	20	77.7	90.7	75 - 125
Calcium	<0.05	4.97	20	105.0	99.9	75 - 125
Magnesium	<0.05	0.30	20	97.8	97.5	75 - 125
Potassium	<0.05	4.38	20	95.6	91.5	75 - 125
Sodium	<0.05	1.03	20	95.9	96.9	75 - 125
Strontium	<0.005	7.24	20	100.1	93.1	75 - 125

Respectfully submitted,


Mark C. Krause, FAIC

ChemSOLVE

chemistry for a changing environment
11629 Manchaca Road • Austin, TX 78748 • (512) 280-7680

Friday, August 15, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 28083

Project: Vernon Briggs

Sample: 2087

Matrix: water

Date/Time Taken: 8/1/97 11:00

Date/Time Rec'd: 8/4/97 13:00

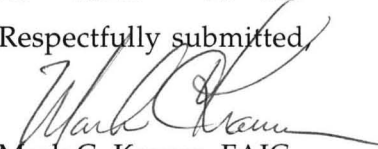
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Bromide	220	mg/L	1	300.1	8/13/97 12:15	LBK
Chloride	910	mg/L	0.5	300.1	8/13/97 12:15	LBK
Sulfate	110	mg/L	0.5	300.1	8/13/97 12:15	LBK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Bromide	<0.1	0.00	20	91.9	91.9	75 - 125
Chloride	<0.05	2.63	20	116.7	119.8	75 - 125
Sulfate	<0.05	0.21	20	109.0	109.2	75 - 125

Respectfully submitted,


Mark C. Krause, FAIC

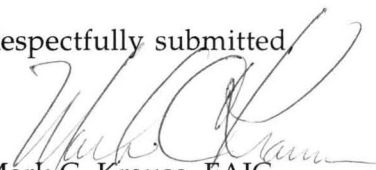
Monday, August 25, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 512-471-0140

Report #: 28084**Report of Laboratory Analysis****Project:** Vernon Briggs**Sample:** 2088**Matrix:** water**Date/Time Taken:** 8/1/97 11:54**Date/Time Rec'd:** 8/4/97 13:00

Organic parameters follow this page

Respectfully submitted,


Mark C. Krause, FAIC

Project: Vernon Briggs**Report #:** 28084**Sample:** 2088

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
1,2-diphenylhydrazine	<10	µg/L	10	8270	8/16/97	20:04	KLM
2,4,5-trichlorophenol	<10	µg/L	10	8270	8/16/97	20:04	KLM
2,4,6-trichlorophenol	<10	µg/L	10	8270	8/16/97	20:04	KLM
2,4-dichlorophenol	<10	µg/L	10	8270	8/16/97	20:04	KLM
2,4-dimethylphenol	<10	µg/L	10	8270	8/16/97	20:04	KLM
2,4-dinitrophenol	<50	µg/L	50	8270	8/16/97	20:04	KLM
2,4-dinitrotoluene	<10	µg/L	10	8270	8/16/97	20:04	KLM
2,6-dinitrotoluene	<10	µg/L	10	8270	8/16/97	20:04	KLM
2-chloronaphthalene	<10	µg/L	10	8270	8/16/97	20:04	KLM
2-chlorophenol	<10	µg/L	10	8270	8/16/97	20:04	KLM
2-methylnaphthalene	<10	µg/L	10	8270	8/16/97	20:04	KLM
2-methylphenol	<10	µg/L	10	8270	8/16/97	20:04	KLM
2-nitroaniline	<10	µg/L	10	8270	8/16/97	20:04	KLM
2-nitrophenol	<50	µg/L	50	8270	8/16/97	20:04	KLM
3&4-methylphenol	<10	µg/L	10	8270	8/16/97	20:04	KLM
3,3'-dichlorobenzidine	<10	µg/L	10	8270	8/16/97	20:04	KLM
3-nitroaniline	<10	µg/L	10	8270	8/16/97	20:04	KLM
4,6-dinitro-2-methylphenol	<50	µg/L	50	8270	8/16/97	20:04	KLM
4-bromophenyl phenyl ether	<10	µg/L	10	8270	8/16/97	20:04	KLM
4-chloro-3-methylphenol	<10	µg/L	10	8270	8/16/97	20:04	KLM
4-chloroaniline	<10	µg/L	10	8270	8/16/97	20:04	KLM
4-chlorophenyl phenyl ether	<10	µg/L	10	8270	8/16/97	20:04	KLM
4-nitroaniline	<50	µg/L	50	8270	8/16/97	20:04	KLM
4-nitrophenol	<50	µg/L	50	8270	8/16/97	20:04	KLM
Acenaphthene	<10	µg/L	10	8270	8/16/97	20:04	KLM
Acenaphthylene	<10	µg/L	10	8270	8/16/97	20:04	KLM
Aniline	<10	µg/L	10	8270	8/16/97	20:04	KLM
Anthracene	<10	µg/L	10	8270	8/16/97	20:04	KLM
Benzidine	<50	µg/L	50	8270	8/16/97	20:04	KLM
Benzo(a)anthracene	<10	µg/L	10	8270	8/16/97	20:04	KLM
Benzo(a)pyrene	<10	µg/L	10	8270	8/16/97	20:04	KLM
Benzo(b&j&k)fluoranthene	<10	µg/L	10	8270	8/16/97	20:04	KLM
Benzo(ghi)perylene	<10	µg/L	10	8270	8/16/97	20:04	KLM

Benzyl alcohol	<50	µg/L	50	8270	8/16/97	20:04	KLM
bis(2-chloroethoxy)methane	<10	µg/L	10	8270	8/16/97	20:04	KLM
bis(2-chloroethyl)ether	<10	µg/L	10	8270	8/16/97	20:04	KLM
bis(2-chloroisopropyl)ether	<10	µg/L	10	8270	8/16/97	20:04	KLM
bis(2-ethylhexyl)phthalate	<10	µg/L	10	8270	8/16/97	20:04	KLM
Butyl benzyl phthalate	<10	µg/L	10	8270	8/16/97	20:04	KLM
Chrysene	<10	µg/L	10	8270	8/16/97	20:04	KLM
Di-n-butylphthalate	<10	µg/L	10	8270	8/16/97	20:04	KLM
Di-n-octylphthalate	<10	µg/L	10	8270	8/16/97	20:04	KLM
Dibenz(a,h)anthracene	<10	µg/L	10	8270	8/16/97	20:04	KLM
Dibenzofuran	<10	µg/L	10	8270	8/16/97	20:04	KLM
Diethylphthalate	<10	µg/L	10	8270	8/16/97	20:04	KLM
Dimethylphthalate	<10	µg/L	10	8270	8/16/97	20:04	KLM
Fluoranthene	<10	µg/L	10	8270	8/16/97	20:04	KLM
Fluorene	<10	µg/L	10	8270	8/16/97	20:04	KLM
Hexachlorobenzene	<10	µg/L	10	8270	8/16/97	20:04	KLM
Hexachlorobutadiene	<10	µg/L	10	8270	8/16/97	20:04	KLM
Hexachlorocyclopentadiene	<10	µg/L	10	8270	8/16/97	20:04	KLM
Hexachloroethane	<10	µg/L	10	8270	8/16/97	20:04	KLM
Indeno(1,2,3-cd)pyrene	<10	µg/L	10	8270	8/16/97	20:04	KLM
Isophorone	<10	µg/L	10	8270	8/16/97	20:04	KLM
N-Nitrosodi-n-propylamine	<10	µg/L	10	8270	8/16/97	20:04	KLM
N-Nitrosodimethylamine	<10	µg/L	10	8270	8/16/97	20:04	KLM
N-Nitrosodiphenylamine	<10	µg/L	10	8270	8/16/97	20:04	KLM
Naphthalene	<10	µg/L	10	8270	8/16/97	20:04	KLM
Nitrobenzene	<10	µg/L	10	8270	8/16/97	20:04	KLM
Pentachlorophenol	<50	µg/L	50	8270	8/16/97	20:04	KLM
Phenanthrene	<10	µg/L	10	8270	8/16/97	20:04	KLM
Phenol	<10	µg/L	10	8270	8/16/97	20:04	KLM
Pyrene	<10	µg/L	10	8270	8/16/97	20:04	KLM
Pyridine	<10	µg/L	10	8270	8/16/97	20:04	KLM

Project: Vernon Briggs**Report #:** 28084**Sample:** 2088**Report of Laboratory Quality Assurance**

Surrogate	Method	Recovery	Limits
Phenol-d6	8270	23	10-94
Terphenyl-d14	8270	99	33-141
Tribromophenol	8270	61	10-123
Fluorobiphenyl	8270	94	43-116
Fluorophenol	8270	31	21-100
Nitrobenzene-d5	8270	67	35-114

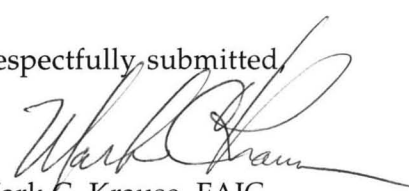
Thursday, August 14, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 512-471-0140

Report #: 28085**Report of Laboratory Analysis****Project:** Vernon Briggs**Sample:** 2089**Matrix:** water**Date/Time Taken:** 8/1/97 11:54**Date/Time Rec'd:** 8/4/97 13:00

Organic parameters follow this page

Respectfully submitted,


Mark C. Krause, FAIC

Project: Vernon Briggs**Report #:** 28085**Sample:** 2089

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
1,1,1,2-tetrachloroethane	<5	µg/L	5	8260	8/13/97	11:55	KLM
1,1,1-trichloroethane	<5	µg/L	5	8260	8/13/97	11:55	KLM
1,1,2,2-tetrachloroethane	<5	µg/L	5	8260	8/13/97	11:55	KLM
1,1,2-trichloroethane	<5	µg/L	5	8260	8/13/97	11:55	KLM
1,1-dichloroethane	<5	µg/L	5	8260	8/13/97	11:55	KLM
1,1-dichloroethene	<5	µg/L	5	8260	8/13/97	11:55	KLM
1,2,3-trichloropropane	<5	µg/L	5	8260	8/13/97	11:55	KLM
1,2,4-trichlorobenzene	<5	µg/L	5	8260	8/13/97	11:55	KLM
1,2-dibromoethane	<5	µg/L	5	8260	8/13/97	11:55	KLM
1,2-dichlorobenzene	<5	µg/L	5	8260	8/13/97	11:55	KLM
1,2-dichloroethane	<5	µg/L	5	8260	8/13/97	11:55	KLM
1,2-dichloropropane	<5	µg/L	5	8260	8/13/97	11:55	KLM
1,3,5-trichlorobenzene	<5	µg/L	5	8260	8/13/97	11:55	KLM
1,3-dichlorobenzene	<5	µg/L	5	8260	8/13/97	11:55	KLM
1,4-dichlorobenzene	<5	µg/L	5	8260	8/13/97	11:55	KLM
2-butanone	<50	µg/L	50	8260	8/13/97	11:55	KLM
2-chlorotoluene	<5	µg/L	5	8260	8/13/97	11:55	KLM
2-Hexanone	<10	µg/L	10	8260	8/13/97	11:55	KLM
4-chlorotoluene	<5	µg/L	5	8260	8/13/97	11:55	KLM
4-methyl-2-pentanone	<10	µg/L	10	8260	8/13/97	11:55	KLM
Acetone	<50	µg/L	50	8260	8/13/97	11:55	KLM
Benzene	<5	µg/L	5	8260	8/13/97	11:55	KLM
Bromobenzene	<5	µg/L	5	8260	8/13/97	11:55	KLM
Bromodichloromethane	<5	µg/L	5	8260	8/13/97	11:55	KLM
Bromoform	<10	µg/L	10	8260	8/13/97	11:55	KLM
Bromomethane	<10	µg/L	10	8260	8/13/97	11:55	KLM
Carbon disulfide	<5	µg/L	5	8260	8/13/97	11:55	KLM
Carbon tetrachloride	<5	µg/L	5	8260	8/13/97	11:55	KLM
Chlorobenzene	<5	µg/L	5	8260	8/13/97	11:55	KLM
Chlorodibromomethane	<5	µg/L	5	8260	8/13/97	11:55	KLM
Chloroethane	<10	µg/L	10	8260	8/13/97	11:55	KLM
Chloroform	<5	µg/L	5	8260	8/13/97	11:55	KLM
Chloromethane	<10	µg/L	10	8260	8/13/97	11:55	KLM

cis-1,2-dichloroethene	<5	µg/L	5	8260	8/13/97	11:55	KLM
cis-1,3-dichloropropene	<5	µg/L	5	8260	8/13/97	11:55	KLM
Dibromomethane	<10	µg/L	10	8260	8/13/97	11:55	KLM
Dichlorodifluoromethane	<10	µg/L	10	8260	8/13/97	11:55	KLM
Ethylbenzene	<5	µg/L	5	8260	8/13/97	11:55	KLM
m,p-Xylenes	<5	µg/L	5	8260	8/13/97	11:55	KLM
Methylene chloride	<10	µg/L	10	8260	8/13/97	11:55	KLM
Naphthalene	<5	µg/L	5	8260	8/13/97	11:55	KLM
o-Xylene	<5	µg/L	5	8260	8/13/97	11:55	KLM
Styrene	<5	µg/L	5	8260	8/13/97	11:55	KLM
Tetrachloroethene	<5	µg/L	5	8260	8/13/97	11:55	KLM
Toluene	<5	µg/L	5	8260	8/13/97	11:55	KLM
trans-1,2-dichloroethene	<5	µg/L	5	8260	8/13/97	11:55	KLM
trans-1,3-dichloropropene	<5	µg/L	5	8260	8/13/97	11:55	KLM
Trichloroethene	<5	µg/L	5	8260	8/13/97	11:55	KLM
Trichlorofluoromethane	<10	µg/L	10	8260	8/13/97	11:55	KLM
Vinyl chloride	<10	µg/L	10	8260	8/13/97	11:55	KLM

Project: Vernon Briggs**Report #:** 28085**Sample:** 2089**Report of Laboratory Quality Assurance**

Surrogate	Method	Recovery	Limits
Toluene-d8	8260	105	86-114
Dibromofluoromethane	8260	101	76-121
Bromofluorobenzene	8260	95	85-117

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 28086

Project: Vernon Briggs

Sample: 2090

Matrix: water

Date/Time Taken: 8/1/97 11:00

Date/Time Rec'd: 8/4/97 13:00

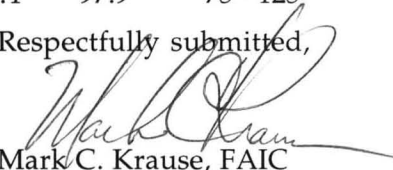
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Arsenic	<0.005	mg/L	0.005	6010	8/7/97 6:22	MCK
Barium	0.65	mg/L	0.001	6010	8/7/97 18:21	MCK
Cadmium	0.027	mg/L	0.005	6010	8/7/97 17:15	MCK
Chromium	<0.005	mg/L	0.005	6010	8/7/97 18:21	MCK
Lead	<0.005	mg/L	0.005	6010	8/7/97 17:01	MCK
Mercury	0.00030	mg/L	0.0002	7470	8/8/97 13:30	LBK
Selenium	<0.1	mg/L	0.1	6010	8/7/97 3:44	MCK
Silver	<0.005	mg/L	0.005	6010	8/7/97 18:05	MCK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Arsenic	<0.005	5.88	20	100.1	94.3	75 - 125
Barium	<0.001	7.35	20	88.1	81.6	75 - 125
Cadmium	<0.005	2.80	20	115.2	118.4	75 - 125
Chromium	<0.005	0.60	20	115.0	114.3	75 - 125
Lead	<0.005	0.00	20	93.5	93.5	75 - 125
Mercury	<0.0002	4.63	20	84.3	80.3	75 - 125
Selenium	<0.005	6.45	20	84.0	78.6	75 - 125
Silver	<0.005	3.70	20	94.4	97.9	75 - 125

Respectfully submitted,


Mark C. Krause, FAIC

Monday, August 18, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 28087

Project: Vernon Briggs

Sample: 2091

Matrix: water

Date/Time Taken: 8/1/97 13:10

Date/Time Rec'd: 8/4/97 13:00

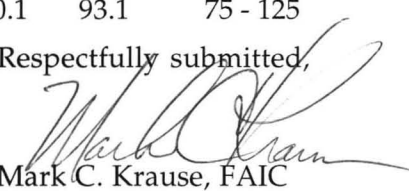
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Barium	0.31	mg/L	0.0050	6010	8/18/97 1:14	MCK
Calcium	70	mg/L	0.050	6010	8/18/97 1:14	MCK
Magnesium	26	mg/L	0.050	6010	8/18/97 1:14	MCK
Potassium	2.7	mg/L	0.050	6010	8/18/97 1:14	MCK
Sodium	280	mg/L	0.050	6010	8/18/97 1:14	MCK
Strontium	0.36	mg/L	0.0050	6010	8/18/97 1:14	MCK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Barium	<0.005	15.43	20	77.7	90.7	75 - 125
Calcium	<0.05	4.97	20	105.0	99.9	75 - 125
Magnesium	<0.05	0.30	20	97.8	97.5	75 - 125
Potassium	<0.05	4.38	20	95.6	91.5	75 - 125
Sodium	<0.05	1.03	20	95.9	96.9	75 - 125
Strontium	<0.005	7.24	20	100.1	93.1	75 - 125

Respectfully submitted,


Mark C. Krause, FAIC

Friday, August 15, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 28088

Project: Vernon Briggs

Sample: 2092

Matrix: water

Date/Time Taken: 8/1/97 13:10

Date/Time Rec'd: 8/4/97 13:00

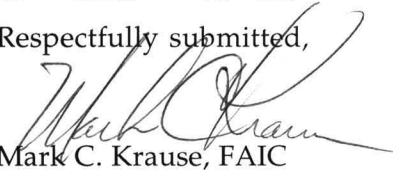
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Bromide	82	mg/L	1	300.1	8/13/97 12:24	LBK
Chloride	450	mg/L	0.5	300.1	8/13/97 12:24	LBK
Sulfate	33	mg/L	0.5	300.1	8/13/97 12:24	LBK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Bromide	<0.1	0.00	20	91.9	91.9	75 - 125
Chloride	<0.05	2.63	20	116.7	119.8	75 - 125
Sulfate	<0.05	0.21	20	109.0	109.2	75 - 125

Respectfully submitted,


Mark C. Krause, FAIC

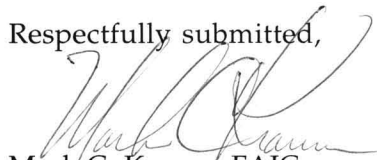
Monday, August 25, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 512-471-0140

Report #: 28089**Report of Laboratory Analysis****Project:** Vernon Briggs**Sample:** 2093**Matrix:** water**Date/Time Taken:** 8/1/97 13:20**Date/Time Rec'd:** 8/4/97 13:00

Organic parameters follow this page

Respectfully submitted,


Mark C. Krause, FAIC

Project: Vernon Briggs**Sample:** 2093**Report #:** 28089

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
1,2-diphenylhydrazine	<10	µg/L	10	8270	8/15/97	18:12	KLM
2,4,5-trichlorophenol	<10	µg/L	10	8270	8/15/97	18:12	KLM
2,4,6-trichlorophenol	<10	µg/L	10	8270	8/15/97	18:12	KLM
2,4-dichlorophenol	<10	µg/L	10	8270	8/15/97	18:12	KLM
2,4-dimethylphenol	<10	µg/L	10	8270	8/15/97	18:12	KLM
2,4-dinitrophenol	<50	µg/L	50	8270	8/15/97	18:12	KLM
2,4-dinitrotoluene	<10	µg/L	10	8270	8/15/97	18:12	KLM
2,6-dinitrotoluene	<10	µg/L	10	8270	8/15/97	18:12	KLM
2-chloronaphthalene	<10	µg/L	10	8270	8/15/97	18:12	KLM
2-chlorophenol	<10	µg/L	10	8270	8/15/97	18:12	KLM
2-methylnaphthalene	<10	µg/L	10	8270	8/15/97	18:12	KLM
2-methylphenol	<10	µg/L	10	8270	8/15/97	18:12	KLM
2-nitroaniline	<10	µg/L	10	8270	8/15/97	18:12	KLM
2-nitrophenol	<50	µg/L	50	8270	8/15/97	18:12	KLM
3&4-methylphenol	<10	µg/L	10	8270	8/15/97	18:12	KLM
3,3'-dichlorobenzidine	<10	µg/L	10	8270	8/15/97	18:12	KLM
3-nitroaniline	<10	µg/L	10	8270	8/15/97	18:12	KLM
4,6-dinitro-2-methylphenol	<50	µg/L	50	8270	8/15/97	18:12	KLM
4-bromophenyl phenyl ether	<10	µg/L	10	8270	8/15/97	18:12	KLM
4-chloro-3-methylphenol	<10	µg/L	10	8270	8/15/97	18:12	KLM
4-chloroaniline	<10	µg/L	10	8270	8/15/97	18:12	KLM
4-chlorophenyl phenyl ether	<10	µg/L	10	8270	8/15/97	18:12	KLM
4-nitroaniline	<50	µg/L	50	8270	8/15/97	18:12	KLM
4-nitrophenol	<50	µg/L	50	8270	8/15/97	18:12	KLM
Acenaphthene	<10	µg/L	10	8270	8/15/97	18:12	KLM
Acenaphthylene	<10	µg/L	10	8270	8/15/97	18:12	KLM
Aniline	<10	µg/L	10	8270	8/15/97	18:12	KLM
Anthracene	<10	µg/L	10	8270	8/15/97	18:12	KLM
Benzidine	<50	µg/L	50	8270	8/15/97	18:12	KLM
Benzo(a)anthracene	<10	µg/L	10	8270	8/15/97	18:12	KLM
Benzo(a)pyrene	<10	µg/L	10	8270	8/15/97	18:12	KLM
Benzo(b&j&k)fluoranthene	<10	µg/L	10	8270	8/15/97	18:12	KLM
Benzo(ghi)perylene	<10	µg/L	10	8270	8/15/97	18:12	KLM

Benzyl alcohol	<50	µg/L	50	8270	8/15/97	18:12	KLM
bis(2-chloroethoxy)methane	<10	µg/L	10	8270	8/15/97	18:12	KLM
bis(2-chloroethyl)ether	<10	µg/L	10	8270	8/15/97	18:12	KLM
bis(2-chloroisopropyl)ether	<10	µg/L	10	8270	8/15/97	18:12	KLM
bis(2-ethylhexyl)phthalate	<10	µg/L	10	8270	8/15/97	18:12	KLM
Butyl benzyl phthalate	<10	µg/L	10	8270	8/15/97	18:12	KLM
Chrysene	<10	µg/L	10	8270	8/15/97	18:12	KLM
Di-n-butylphthalate	<10	µg/L	10	8270	8/15/97	18:12	KLM
Di-n-octylphthalate	<10	µg/L	10	8270	8/15/97	18:12	KLM
Dibenz(a,h)anthracene	<10	µg/L	10	8270	8/15/97	18:12	KLM
Dibenzofuran	<10	µg/L	10	8270	8/15/97	18:12	KLM
Diethylphthalate	<10	µg/L	10	8270	8/15/97	18:12	KLM
Dimethylphthalate	<10	µg/L	10	8270	8/15/97	18:12	KLM
Fluoranthene	<10	µg/L	10	8270	8/15/97	18:12	KLM
Fluorene	<10	µg/L	10	8270	8/15/97	18:12	KLM
Hexachlorobenzene	<10	µg/L	10	8270	8/15/97	18:12	KLM
Hexachlorobutadiene	<10	µg/L	10	8270	8/15/97	18:12	KLM
Hexachlorocyclopentadiene	<10	µg/L	10	8270	8/15/97	18:12	KLM
Hexachloroethane	<10	µg/L	10	8270	8/15/97	18:12	KLM
Indeno(1,2,3-cd)pyrene	<10	µg/L	10	8270	8/15/97	18:12	KLM
Isophorone	<10	µg/L	10	8270	8/15/97	18:12	KLM
N-Nitrosodi-n-propylamine	<10	µg/L	10	8270	8/15/97	18:12	KLM
N-Nitrosodimethylamine	<10	µg/L	10	8270	8/15/97	18:12	KLM
N-Nitrosodiphenylamine	<10	µg/L	10	8270	8/15/97	18:12	KLM
Naphthalene	<10	µg/L	10	8270	8/15/97	18:12	KLM
Nitrobenzene	<10	µg/L	10	8270	8/15/97	18:12	KLM
Pentachlorophenol	<50	µg/L	50	8270	8/15/97	18:12	KLM
Phenanthrene	<10	µg/L	10	8270	8/15/97	18:12	KLM
Phenol	<10	µg/L	10	8270	8/15/97	18:12	KLM
Pyrene	<10	µg/L	10	8270	8/15/97	18:12	KLM
Pyridine	<10	µg/L	10	8270	8/15/97	18:12	KLM

Project: Vernon Briggs**Report #:** 28089**Sample:** 2093**Report of Laboratory Quality Assurance**

Parameter	Blank	Precision	Limit	M.S.	M.S.D.	Limits
Surrogate			Method	Recovery		Limits
Phenol-d6			8270	46		10-94
Terphenyl-d14			8270	82		33-141
Tribromophenol			8270	21		10-123
Fluorobiphenyl			8270	108		43-116
Fluorophenol			8270	35		21-100
Nitrobenzene-d5			8270	79		35-114

Thursday, August 14, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 512-471-0140

Report #: 28090

Report of Laboratory Analysis

Project: Vernon Briggs

Sample: 2094

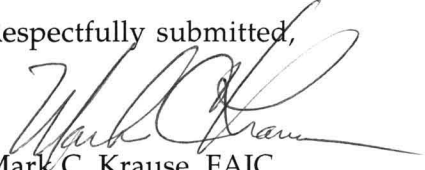
Matrix: water

Date/Time Taken: 8/1/97 13:20

Date/Time Rec'd: 8/4/97 13:00

Organic parameters follow this page

Respectfully submitted,



Mark C. Krause, FAIC

Project: Vernon Briggs**Report #:** 28090**Sample:** 2094

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
1,1,1,2-tetrachloroethane	<5	µg/L	5	8260	8/13/97	12:15	KLM
1,1,1-trichloroethane	<5	µg/L	5	8260	8/13/97	12:15	KLM
1,1,2,2-tetrachloroethane	<5	µg/L	5	8260	8/13/97	12:15	KLM
1,1,2-trichloroethane	<5	µg/L	5	8260	8/13/97	12:15	KLM
1,1-dichloroethane	<5	µg/L	5	8260	8/13/97	12:15	KLM
1,1-dichloroethene	<5	µg/L	5	8260	8/13/97	12:15	KLM
1,2,3-trichloropropane	<5	µg/L	5	8260	8/13/97	12:15	KLM
1,2,4-trichlorobenzene	<5	µg/L	5	8260	8/13/97	12:15	KLM
1,2-dibromoethane	<5	µg/L	5	8260	8/13/97	12:15	KLM
1,2-dichlorobenzene	<5	µg/L	5	8260	8/13/97	12:15	KLM
1,2-dichloroethane	<5	µg/L	5	8260	8/13/97	12:15	KLM
1,2-dichloropropane	<5	µg/L	5	8260	8/13/97	12:15	KLM
1,3,5-trichlorobenzene	<5	µg/L	5	8260	8/13/97	12:15	KLM
1,3-dichlorobenzene	<5	µg/L	5	8260	8/13/97	12:15	KLM
1,4-dichlorobenzene	<5	µg/L	5	8260	8/13/97	12:15	KLM
2-butanone	<50	µg/L	50	8260	8/13/97	12:15	KLM
2-chlorotoluene	<5	µg/L	5	8260	8/13/97	12:15	KLM
2-Hexanone	<10	µg/L	10	8260	8/13/97	12:15	KLM
4-chlorotoluene	<5	µg/L	5	8260	8/13/97	12:15	KLM
4-methyl-2-pentanone	<10	µg/L	10	8260	8/13/97	12:15	KLM
Acetone	<50	µg/L	50	8260	8/13/97	12:15	KLM
Benzene	<5	µg/L	5	8260	8/13/97	12:15	KLM
Bromobenzene	<5	µg/L	5	8260	8/13/97	12:15	KLM
Bromodichloromethane	<5	µg/L	5	8260	8/13/97	12:15	KLM
Bromoform	<10	µg/L	10	8260	8/13/97	12:15	KLM
Bromomethane	<10	µg/L	10	8260	8/13/97	12:15	KLM
Carbon disulfide	<5	µg/L	5	8260	8/13/97	12:15	KLM
Carbon tetrachloride	<5	µg/L	5	8260	8/13/97	12:15	KLM
Chlorobenzene	<5	µg/L	5	8260	8/13/97	12:15	KLM
Chlorodibromomethane	<5	µg/L	5	8260	8/13/97	12:15	KLM
Chloroethane	<10	µg/L	10	8260	8/13/97	12:15	KLM
Chloroform	<5	µg/L	5	8260	8/13/97	12:15	KLM
Chloromethane	<10	µg/L	10	8260	8/13/97	12:15	KLM

cis-1,2-dichloroethene	<5	µg/L	5	8260	8/13/97	12:15	KLM
cis-1,3-dichloropropene	<5	µg/L	5	8260	8/13/97	12:15	KLM
Dibromomethane	<10	µg/L	10	8260	8/13/97	12:15	KLM
Dichlorodifluoromethane	<10	µg/L	10	8260	8/13/97	12:15	KLM
Ethylbenzene	<5	µg/L	5	8260	8/13/97	12:15	KLM
m,p-Xylenes	<5	µg/L	5	8260	8/13/97	12:15	KLM
Methylene chloride	<10	µg/L	10	8260	8/13/97	12:15	KLM
Naphthalene	<5	µg/L	5	8260	8/13/97	12:15	KLM
o-Xylene	<5	µg/L	5	8260	8/13/97	12:15	KLM
Styrene	<5	µg/L	5	8260	8/13/97	12:15	KLM
Tetrachloroethene	<5	µg/L	5	8260	8/13/97	12:15	KLM
Toluene	<5	µg/L	5	8260	8/13/97	12:15	KLM
trans-1,2-dichloroethene	<5	µg/L	5	8260	8/13/97	12:15	KLM
trans-1,3-dichloropropene	<5	µg/L	5	8260	8/13/97	12:15	KLM
Trichloroethene	<5	µg/L	5	8260	8/13/97	12:15	KLM
Trichlorofluoromethane	<10	µg/L	10	8260	8/13/97	12:15	KLM
Vinyl chloride	<10	µg/L	10	8260	8/13/97	12:15	KLM

Project: Vernon Briggs**Report #:** 28090**Sample:** 2094**Report of Laboratory Quality Assurance**

Surrogate	Method	Recovery	Limits
Toluene-d8	8260	102	86-114
Dibromofluoromethane	8260	83	76-121
Bromofluorobenzene	8260	99	85-117

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 28091

Project: Vernon Briggs

Sample: 2095

Matrix: water

Date/Time Taken: 8/1/97 13:10

Date/Time Rec'd: 8/4/97 13:00

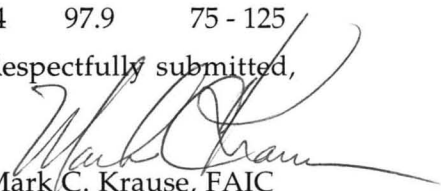
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Arsenic	<0.005	mg/L	0.005	6010	8/7/97	6:41	MCK
Barium	0.93	mg/L	0.001	6010	8/7/97	18:21	MCK
Cadmium	0.021	mg/L	0.005	6010	8/7/97	17:15	MCK
Chromium	<0.005	mg/L	0.005	6010	8/7/97	18:21	MCK
Lead	0.039	mg/L	0.005	6010	8/7/97	17:01	MCK
Mercury	<0.0002	mg/L	0.0002	7470	8/8/97	13:30	LBK
Selenium	<0.005	mg/L	0.005	6010	8/7/97	3:44	MCK
Silver	<0.005	mg/L	0.005	6010	8/7/97	18:05	MCK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Arsenic	<0.005	7.81	20	92.9	85.6	75 - 125
Barium	<0.001	7.35	20	88.1	81.6	75 - 125
Cadmium	<0.005	2.80	20	115.2	118.4	75 - 125
Chromium	<0.005	0.60	20	115.0	114.3	75 - 125
Lead	<0.005	0.00	20	93.5	93.5	75 - 125
Mercury	<0.0002	4.63	20	84.3	80.3	75 - 125
Selenium	<0.005	6.45	20	84.0	78.6	75 - 125
Silver	<0.005	3.70	20	94.4	97.9	75 - 125

Respectfully submitted,


Mark C. Krause, FAIC

Monday, August 18, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 28092

Project: Vernon Briggs

Sample: 2096

Matrix: water

Date/Time Taken: 8/1/97 15:46

Date/Time Rec'd: 8/4/97 13:00

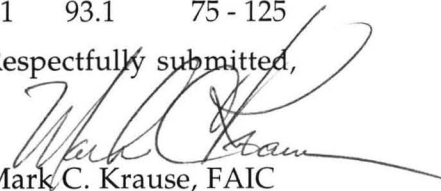
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
Barium	0.25	mg/L	0.0050	6010	8/18/97	1:18	MCK
Calcium	42	mg/L	0.050	6010	8/18/97	1:18	MCK
Magnesium	16	mg/L	0.050	6010	8/18/97	1:18	MCK
Potassium	2.4	mg/L	0.050	6010	8/18/97	1:18	MCK
Sodium	150	mg/L	0.050	6010	8/18/97	1:18	MCK
Strontium	0.19	mg/L	0.0050	6010	8/18/97	1:18	MCK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Barium	<0.005	15.43	20	77.7	90.7	75 - 125
Calcium	<0.05	4.97	20	105.0	99.9	75 - 125
Magnesium	<0.05	0.30	20	97.8	97.5	75 - 125
Potassium	<0.05	4.38	20	95.6	91.5	75 - 125
Sodium	<0.05	1.03	20	95.9	96.9	75 - 125
Strontium	<0.005	7.24	20	100.1	93.1	75 - 125

Respectfully submitted,


Mark C. Krause, FAIC

Friday, August 15, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

Report #: 28093

Project: Vernon Briggs

Sample: 2097

Matrix: water

Date/Time Taken: 8/1/97 15:46

Date/Time Rec'd: 8/4/97 13:00

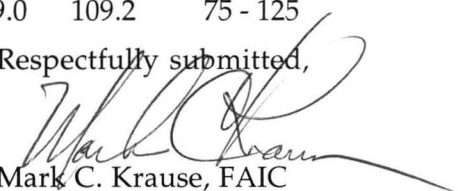
Report of Laboratory Analysis

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Bromide	<1	mg/L	1	300.1	8/13/97 12:32	LBK
Chloride	360	mg/L	0.5	300.1	8/13/97 12:32	LBK
Sulfate	18	mg/L	0.5	300.1	8/13/97 12:32	LBK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Bromide	<0.1	0.00	20	91.9	91.9	75 - 125
Chloride	<0.05	2.63	20	116.7	119.8	75 - 125
Sulfate	<0.05	0.21	20	109.0	109.2	75 - 125

Respectfully submitted,


Mark C. Krause, FAIC

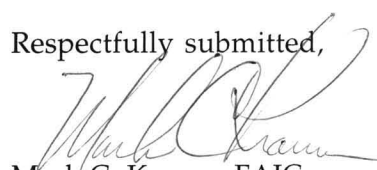
Monday, August 25, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 512-471-0140

Report #: 28094**Report of Laboratory Analysis****Project:** Vernon Briggs**Sample:** 2098**Matrix:** water**Date/Time Taken:** 8/1/97 16:40**Date/Time Rec'd:** 8/4/97 13:00

Organic parameters follow this page

Respectfully submitted,


Mark C. Krause, FAIC

Project: Vernon Briggs**Report #:** 28094**Sample:** 2098

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
1,2-diphenylhydrazine	<10	µg/L	10	8270	8/15/97	23:46	KLM
2,4,5-trichlorophenol	<10	µg/L	10	8270	8/15/97	23:46	KLM
2,4,6-trichlorophenol	<10	µg/L	10	8270	8/15/97	23:46	KLM
2,4-dichlorophenol	<10	µg/L	10	8270	8/15/97	23:46	KLM
2,4-dimethylphenol	<10	µg/L	10	8270	8/15/97	23:46	KLM
2,4-dinitrophenol	<50	µg/L	50	8270	8/15/97	23:46	KLM
2,4-dinitrotoluene	<10	µg/L	10	8270	8/15/97	23:46	KLM
2,6-dinitrotoluene	<10	µg/L	10	8270	8/15/97	23:46	KLM
2-chloronaphthalene	<10	µg/L	10	8270	8/15/97	23:46	KLM
2-chlorophenol	<10	µg/L	10	8270	8/15/97	23:46	KLM
2-methylnaphthalene	<10	µg/L	10	8270	8/15/97	23:46	KLM
2-methylphenol	<10	µg/L	10	8270	8/15/97	23:46	KLM
2-nitroaniline	<10	µg/L	10	8270	8/15/97	23:46	KLM
2-nitrophenol	<50	µg/L	50	8270	8/15/97	23:46	KLM
3&4-methylphenol	<10	µg/L	10	8270	8/15/97	23:46	KLM
3,3'-dichlorobenzidine	<10	µg/L	10	8270	8/15/97	23:46	KLM
3-nitroaniline	<10	µg/L	10	8270	8/15/97	23:46	KLM
4,6-dinitro-2-methylphenol	<50	µg/L	50	8270	8/15/97	23:46	KLM
4-bromophenyl phenyl ether	<10	µg/L	10	8270	8/15/97	23:46	KLM
4-chloro-3-methylphenol	<10	µg/L	10	8270	8/15/97	23:46	KLM
4-chloroaniline	<10	µg/L	10	8270	8/15/97	23:46	KLM
4-chlorophenyl phenyl ether	<10	µg/L	10	8270	8/15/97	23:46	KLM
4-nitroaniline	<50	µg/L	50	8270	8/15/97	23:46	KLM
4-nitrophenol	<50	µg/L	50	8270	8/15/97	23:46	KLM
Acenaphthene	<10	µg/L	10	8270	8/15/97	23:46	KLM
Acenaphthylene	<10	µg/L	10	8270	8/15/97	23:46	KLM
Aniline	<10	µg/L	10	8270	8/15/97	23:46	KLM
Anthracene	<10	µg/L	10	8270	8/15/97	23:46	KLM
Benzidine	<50	µg/L	50	8270	8/15/97	23:46	KLM
Benzo(a)anthracene	<10	µg/L	10	8270	8/15/97	23:46	KLM
Benzo(a)pyrene	<10	µg/L	10	8270	8/15/97	23:46	KLM
Benzo(b&j&k)fluoranthene	<10	µg/L	10	8270	8/15/97	23:46	KLM
Benzo(ghi)perylene	<10	µg/L	10	8270	8/15/97	23:46	KLM

Benzyl alcohol	<50	µg/L	50	8270	8/15/97	23:46	KLM
bis(2-chloroethoxy)methane	<10	µg/L	10	8270	8/15/97	23:46	KLM
bis(2-chloroethyl)ether	<10	µg/L	10	8270	8/15/97	23:46	KLM
bis(2-chloroisopropyl)ether	<10	µg/L	10	8270	8/15/97	23:46	KLM
bis(2-ethylhexyl)phthalate	<10	µg/L	10	8270	8/15/97	23:46	KLM
Butyl benzyl phthalate	<10	µg/L	10	8270	8/15/97	23:46	KLM
Chrysene	<10	µg/L	10	8270	8/15/97	23:46	KLM
Di-n-butylphthalate	<10	µg/L	10	8270	8/15/97	23:46	KLM
Di-n-octylphthalate	<10	µg/L	10	8270	8/15/97	23:46	KLM
Dibenz(a,h)anthracene	<10	µg/L	10	8270	8/15/97	23:46	KLM
Dibenzofuran	<10	µg/L	10	8270	8/15/97	23:46	KLM
Diethylphthalate	<10	µg/L	10	8270	8/15/97	23:46	KLM
Dimethylphthalate	<10	µg/L	10	8270	8/15/97	23:46	KLM
Fluoranthene	<10	µg/L	10	8270	8/15/97	23:46	KLM
Fluorene	<10	µg/L	10	8270	8/15/97	23:46	KLM
Hexachlorobenzene	<10	µg/L	10	8270	8/15/97	23:46	KLM
Hexachlorobutadiene	<10	µg/L	10	8270	8/15/97	23:46	KLM
Hexachlorocyclopentadiene	<10	µg/L	10	8270	8/15/97	23:46	KLM
Hexachloroethane	<10	µg/L	10	8270	8/15/97	23:46	KLM
Indeno(1,2,3-cd)pyrene	<10	µg/L	10	8270	8/15/97	23:46	KLM
Isophorone	<10	µg/L	10	8270	8/15/97	23:46	KLM
N-Nitrosodi-n-propylamine	<10	µg/L	10	8270	8/15/97	23:46	KLM
N-Nitrosodimethylamine	<10	µg/L	10	8270	8/15/97	23:46	KLM
N-Nitrosodiphenylamine	<10	µg/L	10	8270	8/15/97	23:46	KLM
Naphthalene	<10	µg/L	10	8270	8/15/97	23:46	KLM
Nitrobenzene	<10	µg/L	10	8270	8/15/97	23:46	KLM
Pentachlorophenol	<50	µg/L	50	8270	8/15/97	23:46	KLM
Phenanthrene	<10	µg/L	10	8270	8/15/97	23:46	KLM
Phenol	<10	µg/L	10	8270	8/15/97	23:46	KLM
Pyrene	<10	µg/L	10	8270	8/15/97	23:46	KLM
Pyridine	<10	µg/L	10	8270	8/15/97	23:46	KLM

Project: Vernon Briggs**Report #:** 28094**Sample:** 2098**Report of Laboratory Quality Assurance**

Surrogate	Method	Recovery	Limits
Phenol-d6	8270	27	10-94
Terphenyl-d14	8270	112	33-141
Tribromophenol	8270	80	10-123
Fluorobiphenyl	8270	92	43-116
Fluorophenol	8270	59	21-100
Nitrobenzene-d5	8270	53	35-114

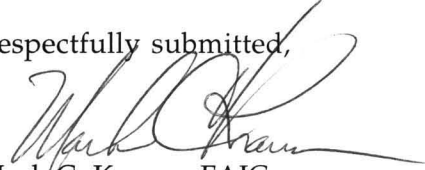
Thursday, August 14, 1997

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 512-471-0140

Report #: 28095**Report of Laboratory Analysis****Project:** Vernon Briggs**Sample:** 2099**Matrix:** water**Date/Time Taken:** 8/1/97 16:40**Date/Time Rec'd:** 8/4/97 13:00

Organic parameters follow this page

Respectfully submitted,


Mark C. Krause, FAIC

Project: Vernon Briggs**Report #:** 28095**Sample:** 2099

Parameter	Result	Units	PQL	Method	Date/Time	Run	By
1,1,1,2-tetrachloroethane	<5	µg/L	5	8260	8/13/97	12:36	KLM
1,1,1-trichloroethane	<5	µg/L	5	8260	8/13/97	12:36	KLM
1,1,2,2-tetrachloroethane	<5	µg/L	5	8260	8/13/97	12:36	KLM
1,1,2-trichloroethane	<5	µg/L	5	8260	8/13/97	12:36	KLM
1,1-dichloroethane	<5	µg/L	5	8260	8/13/97	12:36	KLM
1,1-dichloroethene	<5	µg/L	5	8260	8/13/97	12:36	KLM
1,2,3-trichloropropane	<5	µg/L	5	8260	8/13/97	12:36	KLM
1,2,4-trichlorobenzene	<5	µg/L	5	8260	8/13/97	12:36	KLM
1,2-dibromoethane	<5	µg/L	5	8260	8/13/97	12:36	KLM
1,2-dichlorobenzene	<5	µg/L	5	8260	8/13/97	12:36	KLM
1,2-dichloroethane	<5	µg/L	5	8260	8/13/97	12:36	KLM
1,2-dichloropropane	<5	µg/L	5	8260	8/13/97	12:36	KLM
1,3,5-trichlorobenzene	<5	µg/L	5	8260	8/13/97	12:36	KLM
1,3-dichlorobenzene	<5	µg/L	5	8260	8/13/97	12:36	KLM
1,4-dichlorobenzene	<5	µg/L	5	8260	8/13/97	12:36	KLM
2-butanone	<50	µg/L	50	8260	8/13/97	12:36	KLM
2-chlorotoluene	<5	µg/L	5	8260	8/13/97	12:36	KLM
2-Hexanone	<10	µg/L	10	8260	8/13/97	12:36	KLM
4-chlorotoluene	<5	µg/L	5	8260	8/13/97	12:36	KLM
4-methyl-2-pentanone	<10	µg/L	10	8260	8/13/97	12:36	KLM
Acetone	<50	µg/L	50	8260	8/13/97	12:36	KLM
Benzene	<5	µg/L	5	8260	8/13/97	12:36	KLM
Bromobenzene	<5	µg/L	5	8260	8/13/97	12:36	KLM
Bromodichloromethane	<5	µg/L	5	8260	8/13/97	12:36	KLM
Bromoform	<10	µg/L	10	8260	8/13/97	12:36	KLM
Bromomethane	<10	µg/L	10	8260	8/13/97	12:36	KLM
Carbon disulfide	<5	µg/L	5	8260	8/13/97	12:36	KLM
Carbon tetrachloride	<5	µg/L	5	8260	8/13/97	12:36	KLM
Chlorobenzene	<5	µg/L	5	8260	8/13/97	12:36	KLM
Chlorodibromomethane	<5	µg/L	5	8260	8/13/97	12:36	KLM
Chloroethane	<10	µg/L	10	8260	8/13/97	12:36	KLM
Chloroform	<5	µg/L	5	8260	8/13/97	12:36	KLM
Chloromethane	<10	µg/L	10	8260	8/13/97	12:36	KLM

199

cis-1,2-dichloroethene	<5	µg/L	5	8260	8/13/97	12:36	KLM
cis-1,3-dichloropropene	<5	µg/L	5	8260	8/13/97	12:36	KLM
Dibromomethane	<10	µg/L	10	8260	8/13/97	12:36	KLM
Dichlorodifluoromethane	<10	µg/L	10	8260	8/13/97	12:36	KLM
Ethylbenzene	<5	µg/L	5	8260	8/13/97	12:36	KLM
m,p-Xylenes	<5	µg/L	5	8260	8/13/97	12:36	KLM
Methylene chloride	<10	µg/L	10	8260	8/13/97	12:36	KLM
Naphthalene	<5	µg/L	5	8260	8/13/97	12:36	KLM
o-Xylene	<5	µg/L	5	8260	8/13/97	12:36	KLM
Styrene	<5	µg/L	5	8260	8/13/97	12:36	KLM
Tetrachloroethene	<5	µg/L	5	8260	8/13/97	12:36	KLM
Toluene	<5	µg/L	5	8260	8/13/97	12:36	KLM
trans-1,2-dichloroethene	<5	µg/L	5	8260	8/13/97	12:36	KLM
trans-1,3-dichloropropene	<5	µg/L	5	8260	8/13/97	12:36	KLM
Trichloroethene	<5	µg/L	5	8260	8/13/97	12:36	KLM
Trichlorofluoromethane	<10	µg/L	10	8260	8/13/97	12:36	KLM
Vinyl chloride	<10	µg/L	10	8260	8/13/97	12:36	KLM

200

Project: Vernon Briggs**Report #:** 28095**Sample:** 2099**Report of Laboratory Quality Assurance**

Surrogate	Method	Recovery	Limits
Toluene-d8	8260	104	86-114
Dibromofluoromethane	8260	88	76-121
Bromofluorobenzene	8260	95	85-117

To: Dr. Jeri Sullivan
Bureau of Economic Geology
10100 Burnet Road, Bldg. 130
Austin, TX 78759 FAX: 512-471-0140

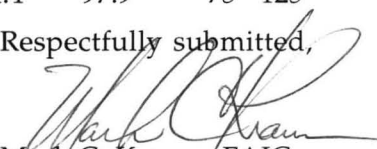
Report #: 28096**Project:** Vernon Briggs**Sample:** 2100**Matrix:** water**Date/Time Taken:** 8/1/97 15:46**Date/Time Rec'd:** 8/4/97 13:00**Report of Laboratory Analysis**

Parameter	Result	Units	PQL	Method	Date/Time Run	By
Arsenic	0.013	mg/L	0.005	6010	8/7/97 6:41	MCK
Barium	0.50	mg/L	0.001	6010	8/7/97 18:21	MCK
Cadmium	0.016	mg/L	0.005	6010	8/7/97 17:15	MCK
Chromium	<0.005	mg/L	0.005	6010	8/7/97 18:21	MCK
Lead	0.020	mg/L	0.005	6010	8/7/97 17:01	MCK
Mercury	0.0010	mg/L	0.0002	7470	8/8/97 13:30	LBK
Selenium	<0.005	mg/L	0.005	6010	8/7/97 4:05	MCK
Silver	<0.005	mg/L	0.005	6010	8/7/97 18:05	MCK

Quality Assurance Data

Parameter	Blank	%RSD	Limit	M.S.	M.S.D.	Limits
Arsenic	<0.005	7.81	20	92.9	85.6	75 - 125
Barium	<0.001	7.35	20	88.1	81.6	75 - 125
Cadmium	<0.005	2.80	20	115.2	118.4	75 - 125
Chromium	<0.005	0.60	20	115.0	114.3	75 - 125
Lead	<0.005	0.00	20	93.5	93.5	75 - 125
Mercury	<0.0002	4.63	20	84.3	80.3	75 - 125
Selenium	<0.005	18.18	20	89.4	105.7	75 - 125
Silver	<0.005	3.70	20	94.4	97.9	75 - 125

Respectfully submitted,


Mark C. Krause, FAIC

APPENDIX C—ENVIRONMENTAL ASSESSMENT BACKGROUND DATA

TEXAS RBCA CHEMICAL DATABASE

Physical Property Data

CAS Number	Constituent	type	Molecular		Diffusion Coefficients				log (Koc) or log(Kd)		Henry's Law Constant		Vapor Pressure		Solubility		acid pKa	base pKb	ref
			Weight (g/mole)	ref	in air (cm2/s)	ref	in water (cm2/s)	ref	(L/kg)	ref	(atm-m3) mol	(unitless)	(@ 20 - 25 C) Pure Comp. (mm Hg)	ref	(@ 20 - 25 C) Pure Comp. (mg/L)	ref			
7440-38-2	Arsenic	N	74.9	4	N/A		N/A		1.46	21	0.00E+00	0.00E+00	0.00E+00	14	4.41E+05	27			
7440-43-9	Cadmium	N	112.41		N/A		N/A		2.02	21	0.00E+00	0.00E+00	0.00E+00	14	6.51E+05	27			
16065-83-1	Chromium (III)	N	52		N/A		N/A		6.29	21	0.00E+00	0.00E+00	0.00E+00		1.67E+05	27			
18540-29-9	Chromium (VI)	N	52		N/A		N/A		1.27	21	0.00E+00	0.00E+00	0.00E+00	14	1.67E+05	27			
100-41-4	Ethylbenzene	A	106.2	5	7.48E-02	TX	8.50E-06	A	3.04	TX	6.43E-03	2.67E-01	TX	1.00E+01	4	1.52E+02	TX		
86-73-7	Fluorene	PAH	166	4	6.26E-02	TX	7.88E-06	4	3.86	TX	6.42E-05	2.67E-03	TX	1.70E-02	4	1.69E+00	TX		
91-20-3	Naphthalene	PAH	128.2	4	5.90E-02	TX	9.40E-06	A	3.11	TX	1.29E-03	5.38E-02	TX	2.30E-01	4	3.00E+01	TX		
1330-20-7	Xylene (mixed isomers)	A	106.2	5	7.40E-02	TX	8.50E-06	A	2.38	TX	7.04E-03	2.93E-01	TX	7.00E+00	4	1.98E+02	TX		

Site Name: Vernon Briggs

Site Location: Matagorda Co.

Completed By: Jeri Sullivan

Date Completed: 1/15/1998

Software version: Texas RBCA, v. 1.0

© Groundwater Services, Inc. (GSI), 1996. All Rights Reserved.

TEXAS RBCA CHEMICAL DATABASE

Toxicity Data

CAS Number Constituent		Reference Dose (mg/kg/day)						Slope Factors 1/(mg/kg/day)						EPA Weight of Evidence	Is Constituent Carcinogenic ?
		Oral		Dermal		Inhalation		Oral		Dermal		Inhalation			
		RfD_oral	ref	RfD_derm	ref	RfD_inhal	ref	SF_oral	ref	SF_derm	ref	SF_inhal	ref		
7440-38-2	Arsenic	3.00E-04	R	6.00E-05	TX	-	R	1.50E+00	TX	7.50E+00	TX	1.51E+01	R	A	TRUE
7440-43-9	Cadmium	5.00E-04	R	2.50E-05	TX	-	R	-	R	-		6.30E+00	R	B1	TRUE
16065-83-1	Chromium (III)	1.00E+00	R	5.00E-03	TX	5.71E-07	R	-	R	-		-	R		FALSE
18540-29-9	Chromium (VI)	5.00E-03	R	1.00E-04	TX	-	R	-	R	-		4.20E+01	R	A	TRUE
100-41-4	Ethylbenzene	1.00E-01	TX	9.70E-02	TX	1.00E+00	TX	-	R	-		-	R	D	FALSE
86-73-7	Fluorene	4.00E-02	TX	2.00E-02	TX	-	R	-	R	-		-	R	D	FALSE
91-20-3	Naphthalene	4.00E-02	TX	3.20E-02	TX	-	TX	-	R	-		-	R	D	FALSE
1330-20-7	Xylene (mixed isomers)	2.00E+00	TX	1.84E+00	TX	-	TX	-	R	-		-	R	D	FALSE

Site Name: Vernon Briggs

Site Location: Matagorda Co.

Completed By: Jeri Sullivan

Date Completed: 1/15/1998

Software version: Texas RBCA, v. 1.0

© Groundwater Services, Inc. (GSI), 1996. All Rights Reserved.

TEXAS RBCA CHEMICAL DATABASE

Miscellaneous Chemical Data

CAS Number Constituent		MCL (mg/L)	Permissible Exposure Limit PEL/TLV		Lower Explosive Limit		Relative Absorption Factors		Water Dermal Permeability Data				Half Life (First-Order Decay) (days)			
			(mg/m3)	ref	(ppm)	ref	Oral	Dermal	Kp (cm/hr)	tau (hr)	t* (hr)	B	ref	Saturated	Unsaturated	ref
7440-38-2	Arsenic	5.00E-02	1.00E-02	OSHA	-		1	0	1.00E-03				D	-	-	
7440-43-9	Cadmium	5.00E-03	5.00E-02	ACGIH	-		1	0	1.00E-03				D	-	-	
16065-83-1	Chromium (III)	1.00E-01			-		1	0	1.00E-03				D	-	-	
18540-29-9	Chromium (VI)	1.00E-01			-		1	0	1.00E-03				D	-	-	
100-41-4	Ethylbenzene	7.00E-01	4.34E+02	ACGIH	1.00E+04	TX	1	0.5	7.40E-02	3.90E-01	1.30E+00	1.40E-01	D	228	228	H
86-73-7	Fluorene				-		1	0.05						120	120	H
91-20-3	Naphthalene		5.00E+01	OSHA	9.00E+03	26	1	0.05	6.90E-02	5.30E-01	2.20E+00	2.00E-01	D	258	258	H
1330-20-7	Xylene (mixed isomers)	1.00E+01	4.34E+02	ACGIH	1.00E+04	TX	1	0.5	8.00E-02	3.90E-01	1.40E+00	1.60E-01	D	360	360	H

Site Name: Vernon Briggs

Site Location: Matagorda Co.

Completed By: Jeri Sullivan

Date Completed: 1/15/1998

Software version: Texas RBCA, v. 1.0

© Groundwater Services, Inc. (GSI), 1996. All Rights Reserved.

GROUNDWATER DAF VALUES

(Enter DAF values in the following table)

CONSTITUENT	Groundwater DAF
	Off-Site Residential Receptor
Arsenic	1.5E+0
Cadmium	1.5E+0
Chromium (III)	1.5E+0
Chromium (VI)	1.5E+0
Ethylbenzene	1.5E+0
Fluorene	1.5E+0
Naphthalene	1.5E+0
Xylene (mixed isomers)	1.5E+0

Site Name: Vernon Briggs
Site Location: Matagorda Co.

Completed By: Jeri Sullivan
Date: 1/15/1998

© Groundwater Services, Inc. (GSI), 1996. All Rights Reserved.

TNRCC RBCA SITE ASSESSMENT**EXPOSURE LIMITS IN GROUNDWATER AND AIR**

CONSTITUENT	Exposure Limits Applied to Receptors	
	Groundwater	Air (Comm. only)
	(MCL) (mg/L)	(PEL/TLV) (mg/m ³)
Arsenic	5.0E-2	
Cadmium	5.0E-3	
Chromium (III)	1.0E-1	
Chromium (VI)	1.0E-1	
Ethylbenzene	7.0E-1	
Fluorene		
Naphthalene		
Xylene (mixed isomers)	1.0E+1	

Site Name: Vernon Briggs
Site Location: Matagorda Co.

Completed By: Jeri Sullivan
Date: 1/15/1998

© Groundwater Services, Inc. (GSI), 1996. All Rights Reserved.

Site Name: Vernon Briggs

Site Location: Matagorda Co.

Completed By: Jeri Sullivan

Date Completed: 1/15/1998

5 OF 10

PLAN B EXPOSURE CONCENTRATION AND INTAKE CALCULATION

SOIL EXPOSURE PATHWAYS

☒ (CHECKED IF PATHWAY IS ACTIVE)

SOIL: DERMAL CONTACT

Exposure Concentration

Constituents of Concern	1) Source Medium	2) Exposure Multiplier (SAxAFxABSxCFxEFxED)/(BWxAT) (kg/kg-day)		3) Average Daily Intake Rate (mg/kg-day) (1) X (2)	
	Soil Conc. (mg/kg)	On-Site: Current Commercial		On-Site: Current Commercial	
Arsenic	7.7E+0	0.0E+0		0.0E+0	
Cadmium	8.6E-1	0.0E+0		0.0E+0	
Chromium (III)	4.5E+2	0.0E+0		0.0E+0	
Chromium (VI)	0.0E+0	0.0E+0		0.0E+0	
Ethylbenzene	3.0E+2	1.4E-5		4.3E-3	
Fluorene	1.3E-1	1.4E-6		1.8E-7	
Naphthalene	3.8E-1	1.4E-6		5.4E-7	
Xylene (mixed isomers)	2.8E-2	1.4E-5		4.0E-7	

NOTE: ABS = Dermal absorption factor (dim)
AF = Adherence factor (mg/cm²)
AT = Averaging time (days)

BW = Body Weight (kg)
CF = Units conversion factor
ED = Exp. duration (yrs)

EF = Exposure frequency (days/yr)
ET = Exposure time (hrs/day)
IR = Intake rate (L/day or mg/day)

POE = Point of exposure
SA = Skin exposure area (cm²/day)

Site Name: Vernon Briggs

Site Location: Matagorda Co.

Completed By: Jeri Sullivan

Date Completed: 1/15/1998

6 OF 10

PLAN B EXPOSURE CONCENTRATION AND INTAKE CALCULATION

SOIL EXPOSURE PATHWAYS		☒ (CHECKED IF PATHWAY IS ACTIVE)					
SOIL: INGESTION	Exposure Concentration					TOTAL PATHWAY INTAKE (mg/kg-day)	
	1) <u>Source Medium</u>	2) <u>Exposure Multiplier</u> (IRxCxExED)/(BWxAT) (kg/kg-day)		3) <u>Average Daily Intake Rate</u> (mg/kg-day) (1) X (2)		(Sum intake values from dermal and ingestion routes.)	
	Constituents of Concern	Soil Conc. (mg/kg)	On-Site: Current Commercial		On-Site: Current Commercial	On-Site: Current Commercial	
	Arsenic	7.7E+0	8.7E-8		6.7E-7	6.7E-7	
	Cadmium	8.6E-1	2.4E-7		2.1E-7	2.1E-7	
	Chromium (III)	4.5E+2	2.4E-7		1.1E-4	1.1E-4	
	Chromium (VI)	0.0E+0	2.4E-7		0.0E+0	0.0E+0	
	Ethylbenzene	3.0E+2	2.4E-7		7.3E-5	4.3E-3	
	Fluorene	1.3E-1	2.4E-7		3.2E-8	2.2E-7	
	Naphthalene	3.8E-1	2.4E-7		9.3E-8	6.3E-7	
	Xylene (mixed isomers)	2.8E-2	2.4E-7		6.8E-9	4.0E-7	

NOTE: ABS = Dermal absorption factor (dim) BW = Body Weight (kg) EF = Exposure frequency (days/yr) POE = Point of exposure
AF = Adherence factor (mg/cm²) CF = Units conversion factor ET = Exposure time (hrs/day) SA = Skin exposure area (cm²/day)
AT = Averaging time (days) ED = Exp. duration (yrs) IR = Intake rate (L/day or mg/day)

Site Name: Vernon Briggs

Site Location: Matagorda Co.

Completed By: Jeri Sullivan

Date Completed: 1/15/1998

3 OF 5

PLAN B PATHWAY RISK CALCULATION

SOIL EXPOSURE PATHWAYS

■ (CHECKED IF PATHWAYS ARE ACTIVE)

Constituents of Concern	(1) EPA Carcinogenic Classification	CARCINOGENIC RISK				TOXIC EFFECTS						
		(2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site: Current Commercial	(3a) Oral Slope Factor (mg/kg-day) ⁻¹	(3b) Dermal Slope Factor (mg/kg-day) ⁻¹	(4) Individual COC Risk (2) x (3) On-Site: Current Commercial	(5) Total Toxicant Intake Rate (mg/kg/day) On-Site: Current Commercial	(6a) Oral Ref. Dose (mg/kg-day)	(6b) Dermal Ref. Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6) On-Site: Current Commercial			
Arsenic	A	6.7E-7	1.5E+0	7.5E+0	1.0E-6	1.9E-6	3.0E-4	6.0E-5	6.3E-3			
Cadmium	B1					2.1E-7	5.0E-4	2.5E-5	4.2E-4			
Chromium (III)						1.1E-4	1.0E+0	5.0E-3	1.1E-4			
Chromium (VI)	A					0.0E+0	5.0E-3	1.0E-4	0.0E+0			
Ethylbenzene	D					4.3E-3	1.0E-1	9.7E-2	4.5E-2			
Fluorene	D					2.2E-7	4.0E-2	2.0E-2	1.0E-5			
Naphthalene	D					6.3E-7	4.0E-2	3.2E-2	1.9E-5			
Xylene (mixed isomers)	D					4.0E-7	2.0E+0	1.8E+0	2.2E-7			

Total Pathway Carcinogenic Risk = 1.0E-6

Total Pathway Hazard Index = 5.1E-2

Site Name: Vernon Briggs

Site Location: Matagorda Co.

Completed By: Jeri Sullivan

Date Completed: 1/15/1998

4 OF 5

PLAN B PATHWAY RISK CALCULATION

COMBINED SOIL/AIR EXPOSURE PATHWAY

■ (CHECKED IF PATHWAYS ARE ACTIVE)

Constituents of Concern	CARCINOGENIC RISK						TOXIC EFFECTS					
	(1) EPA Carcinogenic Classification	(2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site: Current Commercial	(3a) Oral Slope Factor (mg/kg-day)^-1	(3b) Inhalation Slope Factor (mg/kg-day)^-1	(3c) Dermal Slope Factor (mg/kg-day)^-1	(4) Individual COC Risk (2) x (3) On-Site: Current Commercial	(5) Total Toxicant Intake Rate (mg/kg/day) On-Site: Current Commercial	(6a) Oral Ref. Dose (mg/kg-day)	(6b) Inhalation Ref. Dose (mg/kg-day)	(6c) Dermal Ref. Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6) On-Site: Current Commercial	
Arsenic	A	6.7E-7	1.5E+0	1.5E+1	7.5E+0	1.0E-6	1.9E-6	3.0E-4		6.0E-5	6.3E-3	
Cadmium	B1	1.0E-12		6.3E+0		6.5E-12	2.1E-7	5.0E-4		2.5E-5	4.2E-4	
Chromium (III)							1.1E-4	1.0E+0	5.7E-7	5.0E-3	2.8E-3	
Chromium (VI)	A	0.0E+0		4.2E+1		0.0E+0	0.0E+0	5.0E-3		1.0E-4	0.0E+0	
Ethylbenzene	D						5.0E-3	1.0E-1	1.0E+0	9.7E-2	4.5E-2	
Fluorene	D						2.2E-7	4.0E-2		2.0E-2	1.0E-5	
Naphthalene	D						6.3E-7	4.0E-2		3.2E-2	1.9E-5	
Xylene (mixed isomers)	D						4.0E-7	2.0E+0		1.8E+0	2.2E-7	

Total Pathway Carcinogenic Risk = 1.0E-6

Total Pathway Hazard Index = 5.5E-2

Site Name: Vernon Briggs

Site Location: Matagorda Co.

Completed By: Jeri Sullivan

Date Completed: 1/15/1998

7 OF 10

PLAN B EXPOSURE CONCENTRATION AND INTAKE CALCULATION

GROUNDWATER EXPOSURE PATHWAYS

■ (CHECKED IF PATHWAY IS ACTIVE)

SOIL: LEACHING TO GROUNDWATER
GROUNDWATER INGESTION

Constituents of Concern	Exposure Concentration		2) NAF Value (L/kg)		3) Exposure Medium		4) Exposure Multiplier		5) Average Daily Intake Rate	
	1) Source Medium	Soil Conc. (mg/kg)	Receptor		Groundwater: POE Conc. (mg/L) (1)/(2)		(IRxEFxED)/(BWxAT) (L/kg-day)		(mg/kg-day) (3) X (4)	
			On-Site: Future Commercial	Off-Site: Current Residential	On-Site: Future Commercial	Off-Site: Current Residential	On-Site: Future Commercial	Off-Site: Current Residential	On-Site: Future Commercial	Off-Site: Current Residential
Arsenic		7.7E+0	2.9E+3	4.4E+3	2.6E-3	1.7E-3	3.5E-3	1.2E-2	9.2E-6	2.0E-5
Cadmium		8.6E-1	1.1E+4	1.6E+4	8.2E-5	5.4E-5	9.8E-3	2.7E-2	8.0E-7	1.5E-6
Chromium (III)		4.5E+2	1.9E+8	2.9E+8	2.3E-6	1.5E-6	9.8E-3	2.7E-2	2.3E-8	4.2E-8
Chromium (VI)		0.0E+0	1.9E+3	2.8E+3	0.0E+0	0.0E+0	9.8E-3	2.7E-2	0.0E+0	0.0E+0
Ethylbenzene		3.0E+2	2.3E+2	3.5E+2	1.3E+0	8.7E-1	9.8E-3	2.7E-2	1.3E-2	2.4E-2
Fluorene		1.3E-1	1.5E+3	2.2E+3	8.9E-5	5.9E-5	9.8E-3	2.7E-2	8.7E-7	1.6E-6
Naphthalene		3.8E-1	2.6E+2	4.0E+2	1.4E-3	9.5E-4	9.8E-3	2.7E-2	1.4E-5	2.6E-5
Xylene (mixed isomers)		2.8E-2	5.7E+1	8.6E+1	4.9E-4	3.2E-4	9.8E-3	2.7E-2	4.8E-6	8.9E-6

Groundwater DAF Option: Domenico - No Decay

NOTE: AT = Averaging time (days)

BW = Body Weight (kg)

CF = Units conversion factor

ED = Exp. duration (yrs)

EF = Exposure frequency (days/yr)

EV = Event frequency (events/day)

IR = Intake rate (L/day)

POE = Point of exposure

SA = Skin surface area (cm²)

Z = Adsorption factor (cm/event)

STATE OF TEXAS - TNRCC RBCA SITE ASSESSMENT

Plan B Output Table 2

Site Name: Vernon Briggs

Site Location: Matagorda Co.

Completed By: Jeri Sullivan

Date Completed: 1/15/1998

9 OF 10

PLAN B EXPOSURE CONCENTRATION AND INTAKE CALCULATION

GROUNDWATER EXPOSURE PATHWAYS

☒ (CHECKED IF PATHWAY IS ACTIVE)

SOIL: LEACHING TO GROUNDWATER

Exposure Concentration

GROUNDWATER DERMAL CONTACT

Constituents of Concern	1) Source Medium	2) NAF Value (L/kg)		3) Exposure Medium		4) Exposure Multiplier		5) Average Daily Intake Rate	
	Soil Conc. (mg/kg)	Receptor		Groundwater: POE Conc. (mg/L) (1)/(2)		(SAxZxCfxEFxED*EV)/(BWxAT) (L/kg-day)		(mg/kg-day) (3) X (4)	
		On-Site:	Off-Site: Current Residential	On-Site:	Off-Site: Current Residential	On-Site:	Off-Site: Current Residential	On-Site:	Off-Site: Current Residential
Arsenic	7.7E+0		4.4E+3		1.7E-3		1.7E-6		3.0E-9
Cadmium	8.6E-1		1.6E+4		5.4E-5		3.6E-6		2.0E-10
Chromium (III)	4.5E+2		2.9E+8		1.5E-6		3.6E-6		5.6E-12
Chromium (VI)	0.0E+0		2.8E+3		0.0E+0		3.6E-6		0.0E+0
Ethylbenzene	3.0E+2		3.5E+2		8.7E-1		3.2E-4		2.8E-4
Fluorene	1.3E-1		2.2E+3		5.9E-5		0.0E+0		0.0E+0
Naphthalene	3.8E-1		4.0E+2		9.5E-4		3.3E-4		3.1E-7
Xylene (mixed isomers)	2.8E-2		8.6E+1		3.2E-4		3.5E-4		1.1E-7

Groundwater DAF Option: Domenico - No Decay

NOTE: AT = Averaging time (days)

BW = Body Weight (kg)

CF = Units conversion factor

ED = Exp. duration (yrs)

EF = Exposure frequency (days/yr)

EV = Event frequency (events/day)

IR = Intake rate (L/day)

POE = Point of exposure

SA = Skin surface area (cm²)

Z = Adsorption factor (cm/event)

Site Name: Vernon Briggs

Site Location: Matagorda Co.

Completed By: Jeri Sullivan

Date Completed: 1/15/1998

8 OF 10

PLAN B EXPOSURE CONCENTRATION AND INTAKE CALCULATION

GROUNDWATER EXPOSURE PATHWAYS

☒ (CHECKED IF PATHWAY IS ACTIVE)

GROUNDWATER: INGESTION

Constituents of Concern	Exposure Concentration		2) NAF Value (dim)		3) Exposure Medium		4) Exposure Multiplier		5) Average Daily Intake Rate	
	1) Source Medium	Groundwater Conc. (mg/L)	Receptor		Groundwater: POE Conc. (mg/L) (1)/(2)		(IRxEFxED)/(BWxAT) (L/kg-day)		(mg/kg-day) (3) X (4)	
			On-Site: Future Commercial	Off-Site: Current Residential	On-Site: Future Commercial	Off-Site: Current Residential	On-Site: Future Commercial	Off-Site: Current Residential	On-Site: Future Commercial	Off-Site: Current Residential
Arsenic		2.5E-3	1.0E+0	1.5E+0	2.5E-3	1.7E-3	3.5E-3	1.2E-2	8.7E-6	1.9E-5
Cadmium		1.6E-2	1.0E+0	1.5E+0	1.6E-2	1.1E-2	9.8E-3	2.7E-2	1.6E-4	2.9E-4
Chromium (III)		2.5E-3	1.0E+0	1.5E+0	2.5E-3	1.7E-3	9.8E-3	2.7E-2	2.4E-5	4.5E-5
Chromium (VI)		2.5E-3	1.0E+0	1.5E+0	2.5E-3	1.7E-3	9.8E-3	2.7E-2	2.4E-5	4.5E-5
Ethylbenzene		2.5E-3	1.0E+0	1.5E+0	2.5E-3	1.7E-3	9.8E-3	2.7E-2	2.4E-5	4.5E-5
Fluorene		5.0E-3	1.0E+0	1.5E+0	5.0E-3	3.3E-3	9.8E-3	2.7E-2	4.9E-5	9.1E-5
Naphthalene		2.5E-3	1.0E+0	1.5E+0	2.5E-3	1.7E-3	9.8E-3	2.7E-2	2.4E-5	4.5E-5
Xylene (mixed isomers)		2.5E-3	1.0E+0	1.5E+0	2.5E-3	1.7E-3	9.8E-3	2.7E-2	2.4E-5	4.5E-5

Groundwater DAF Option: Domenico - No Decay

NOTE: AT = Averaging time (days)

BW = Body Weight (kg)
 CF = Units conversion factor
 ED = Exp. duration (yrs)

EF = Exposure frequency (days/yr)
 EV = Event frequency (events/day)
 IR = Intake rate (L/day or mg/day)

POE = Point of exposure
 SA = Skin surface area (cm²)
 Z = Adsorption factor (cm/event)

Site Name: Vernon Briggs

Site Location: Matagorda Co.

Completed By: Jeri Sullivan

Date Completed: 1/15/1998

10 OF 10

PLAN B EXPOSURE CONCENTRATION AND INTAKE CALCULATION

GROUNDWATER EXPOSURE PATHWAYS

☒ (CHECKED IF PATHWAY IS ACTIVE)

GROUNDWATER: DERMAL CONTACT

Constituents of Concern	Exposure Concentration		2) NAF Value (dim)		3) Exposure Medium		4) Exposure Multiplier		5) Average Daily Intake Rate		TOTAL PATHWAY INTAKE (mg/kg-day)	
	1) Source Medium	Groundwater Conc. (mg/L)	Receptor		Groundwater: POE Conc. (mg/L) (1)/(2)		(SAxZxCfxEFxED*EV)/(BWxAT) (L/kg-day)		(mg/kg-day) (3) X (4)		(Sum intake values from maximum of ingestion and dermal routes.)	
			On-Site:	Off-Site: Current Residential	On-Site:	Off-Site: Current Residential	On-Site:	Off-Site: Current Residential	On-Site:	Off-Site: Current Residential	On-Site: Future Commercial	Off-Site: Current Residential
Arsenic	2.5E-3			1.5E+0		1.7E-3		1.7E-6		2.8E-9	9.2E-6	2.0E-5
Cadmium	1.6E-2			1.5E+0		1.1E-2		3.6E-6		3.8E-8	1.6E-4	2.9E-4
Chromium (III)	2.5E-3			1.5E+0		1.7E-3		3.6E-6		6.0E-9	2.4E-5	4.5E-5
Chromium (VI)	2.5E-3			1.5E+0		1.7E-3		3.6E-6		6.0E-9	2.4E-5	4.5E-5
Ethylbenzene	2.5E-3			1.5E+0		1.7E-3		3.2E-4		5.3E-7	1.3E-2	2.4E-2
Fluorene	5.0E-3			1.5E+0		3.3E-3		0.0E+0		0.0E+0	4.9E-5	9.1E-5
Naphthalene	2.5E-3			1.5E+0		1.7E-3		3.3E-4		5.4E-7	2.4E-5	4.6E-5
Xylene (mixed isomers)	2.5E-3			1.5E+0		1.7E-3		3.5E-4		5.7E-7	2.4E-5	4.6E-5

Groundwater DAF Option: Domenico - No Decay

NOTE: AT = Averaging time (days)

BW = Body Weight (kg)
CF = Units conversion factor
ED = Exp. duration (yrs)EF = Exposure frequency (days/yr)
EV = Event frequency (events/day)
IR = Intake rate (L/day or mg/day)POE = Point of exposure
SA = Skin surface area (cm²)
Z = Adsorption factor (cm/event)

Site Name: Vernon Briggs

Site Location: Matagorda Co.

Completed By: Jeri Sullivan

Date Completed: 1/15/1998

5 OF 5

PLAN B PATHWAY RISK CALCULATION

GROUNDWATER EXPOSURE PATHWAYS

■ (CHECKED IF PATHWAYS ARE ACTIVE)

Constituents of Concern	(1) EPA Carcinogenic Classification	CARCINOGENIC RISK				TOXIC EFFECTS							
		(2) Total Carcinogenic Intake Rate (mg/kg/day)		(3a) Oral Slope Factor	(3b) Dermal Slope Factor	(4) Individual COC Risk (2) x (3)		(5) Total Toxicant Intake Rate (mg/kg/day)		(6a) Oral Ref. Dose	(6b) Dermal Ref. Dose	(7) Individual COC Hazard Quotient (5) / (6)	
		On-Site: Future Commercial	Off-Site: Current Residential	(mg/kg-day) ⁻¹	(mg/kg-day) ⁻¹	On-Site: Future Commercial	Off-Site: Current Residential	On-Site: Future Commercial	Off-Site: Current Residential	(mg/kg-day)	(mg/kg-day)	On-Site: Future Commercial	Off-Site: Current Residential
Arsenic	A	9.2E-6	2.0E-5	1.5E+0	7.5E+0	1.4E-5	3.1E-5	2.6E-5	4.8E-5	3.0E-4	6.0E-5	8.6E-2	1.6E-1
Cadmium	B1							1.6E-4	2.9E-4	5.0E-4	2.5E-5	3.1E-1	5.8E-1
Chromium (III)								2.4E-5	4.5E-5	1.0E+0	5.0E-3	2.4E-5	4.6E-5
Chromium (VI)	A							2.4E-5	4.5E-5	5.0E-3	1.0E-4	4.9E-3	9.1E-3
Ethylbenzene	D							1.3E-2	2.4E-2	1.0E-1	9.7E-2	1.3E-1	2.4E-1
Fluorene	D							4.9E-5	9.1E-5	4.0E-2	2.0E-2	1.2E-3	2.3E-3
Naphthalene	D							2.4E-5	4.6E-5	4.0E-2	3.2E-2	6.1E-4	1.1E-3
Xylene (mixed isomers)	D							2.4E-5	4.6E-5	2.0E+0	1.8E+0	1.2E-5	2.3E-5
Total Pathway Carcinogenic Risk =						1.4E-5	3.1E-5	Total Pathway Hazard Index =					

Site Name: Vernon Briggs

Site Location: Matagorda Co.

Completed By: Jeri Sullivan

Date Completed: 1/15/1998

1 OF 10

PLAN B EXPOSURE CONCENTRATION AND INTAKE CALCULATION

OUTDOOR AIR EXPOSURE PATHWAYS

■ (CHECKED IF PATHWAY IS ACTIVE)

VOLATILIZATION FROM SOILS:

Exposure Concentration

VAPOR AND DUST INHALATION

Constituents of Concern	1) Source Medium	2) NAF Value (m ³ /kg)		3) Exposure Medium		4) Exposure Multiplier		5) Average Daily Intake Rate	
	Soil Conc. (mg/kg)	Receptor		Air: POE Conc. (mg/m ³) (1) / (2)		(IRxExED)/(BWxAT) (m ³ /kg-day)		(mg/kg-day) (3) X (4)	
		On-Site: Current Commercial	Off-Site: Current Residential	On-Site: Current Commercial	Off-Site: Current Residential	On-Site: Current Commercial	Off-Site: Current Residential	On-Site: Current Commercial	Off-Site: Current Residential
Arsenic	7.7E+0	2.9E+10	2.9E+10	2.6E-10	2.6E-10	3.5E-2	8.8E-2	9.2E-12	2.3E-11
Cadmium	8.6E-1	2.9E+10	2.9E+10	2.9E-11	2.9E-11	3.5E-2	8.8E-2	1.0E-12	2.6E-12
Chromium (III)	4.5E+2	2.9E+10	2.9E+10	1.5E-8	1.5E-8	9.8E-2	2.1E-1	1.5E-9	3.2E-9
Chromium (VI)	0.0E+0	2.9E+10	2.9E+10	0.0E+0	0.0E+0	3.5E-2	8.8E-2	0.0E+0	0.0E+0
Ethylbenzene	3.0E+2	4.6E+4	5.0E+4	6.6E-3	6.0E-3	9.8E-2	2.1E-1	6.4E-4	1.2E-3
Fluorene	1.3E-1	1.3E+6	1.4E+6	1.0E-7	9.1E-8	9.8E-2	2.1E-1	9.8E-9	1.9E-8
Naphthalene	3.8E-1	1.3E+5	1.4E+5	3.0E-6	2.8E-6	9.8E-2	2.1E-1	3.0E-7	5.7E-7
Xylene (mixed isomers)	2.8E-2	2.0E+4	2.2E+4	1.4E-6	1.3E-6	9.8E-2	2.1E-1	1.4E-7	2.7E-7

NOTE: ABS = Dermal absorption factor (dim)
AF = Adherence factor (mg/cm²)
AT = Averaging time (days)

BW = Body Weight (kg)
CF = Units conversion factor
ED = Exp. duration (yrs)

EF = Exposure frequency (days/yr)
ET = Exposure time (hrs/day)
IR = Intake rate (m³/day)

POE = Point of exposure
SA = Skin surface area (cm²)

Site Name: Vernon Briggs

Site Location: Matagorda Co.

Completed By: Jeri Sullivan

Date Completed: 1/15/1998

2 OF 10

PLAN B EXPOSURE CONCENTRATION AND INTAKE CALCULATION

OUTDOOR AIR EXPOSURE PATHWAYS

■ (CHECKED IF PATHWAY IS ACTIVE)

VOLATILIZATION FROM GW:

Exposure Concentration

TOTAL PATHWAY INTAKE (mg/kg-day)

VAPOR INHALATION

Constituents of Concern

	1) Source Medium Groundwater Conc. (mg/L)	2) NAF Value (m ³ /L) Receptor		3) Exposure Medium Air: POE Conc. (mg/m ³) (1) / (2)		4) Exposure Multiplier (IRxExFxED)/(BWxAT) (m ³ /kg-day)		5) Average Daily Intake Rate (mg/kg-day) (3) X (4)		TOTAL PATHWAY INTAKE (mg/kg-day) (Sum intake values from soil and groundwater routes.)	
		On-Site: Future Commercial	Off-Site: Current Residential	On-Site: Future Commercial	Off-Site: Current Residential	On-Site: Future Commercial	Off-Site: Current Residential	On-Site: Future Commercial	Off-Site: Current Residential	On-Site: Current Commercial	Off-Site: Current Residential
Arsenic	2.5E-3	NA	NA	NA	NA	7.0E-2	8.8E-2	NA	NA	9.2E-12	2.3E-11
Cadmium	1.6E-2	NA	NA	NA	NA	7.0E-2	8.8E-2	NA	NA	1.0E-12	2.6E-12
Chromium (III)	2.5E-3	NA	NA	NA	NA	2.0E-1	2.1E-1	NA	NA	1.5E-9	3.2E-9
Chromium (VI)	2.5E-3	NA	NA	NA	NA	7.0E-2	8.8E-2	NA	NA	0.0E+0	0.0E+0
Ethylbenzene	2.5E-3	1.1E+5	1.1E+5	2.3E-8	2.3E-8	2.0E-1	2.1E-1	4.5E-9	4.7E-9	6.4E-4	1.2E-3
Fluorene	5.0E-3	2.0E+6	2.0E+6	2.5E-9	2.5E-9	2.0E-1	2.1E-1	4.9E-10	5.1E-10	1.0E-8	1.9E-8
Naphthalene	2.5E-3	2.7E+5	2.7E+5	9.3E-9	9.3E-9	2.0E-1	2.1E-1	1.8E-9	1.9E-9	3.0E-7	5.7E-7
Xylene (mixed isomers)	2.5E-3	1.0E+5	1.0E+5	2.4E-8	2.4E-8	2.0E-1	2.1E-1	4.8E-9	5.0E-9	1.4E-7	2.7E-7

NOTE: ABS = Dermal absorption factor (dim)
AF = Adherence factor (mg/cm²)
AT = Averaging time (days)

BW = Body Weight (kg)
CF = Units conversion factor
ED = Exp. duration (yrs)

EF = Exposure frequency (days/yr)
ET = Exposure time (hrs/day)
IR = Intake rate (m³/day)

POE = Point of exposure
SA = Skin surface area (cm²)

STATE OF TEXAS - TNRCC RBCA SITE ASSESSMENT

Plan B Output Table 3

Site Name: Vernon Briggs

Site Location: Matagorda Co.

Completed By: Jeri Sullivan

Date Completed: 1/15/1998

1 OF 5

PLAN B PATHWAY RISK CALCULATION

OUTDOOR AIR EXPOSURE PATHWAYS

■ (CHECKED IF PATHWAYS ARE ACTIVE)

Constituents of Concern	CARCINOGENIC RISK						TOXIC EFFECTS				
	(1) EPA Carcinogenic Classification	(2) Total Carcinogenic Intake Rate (mg/kg/day)		(3) Inhalation Slope Factor (mg/kg-day) ⁻¹	(4) Individual COC Risk (2) x (3)		(5) Total Toxicant Intake Rate (mg/kg/day)		(6) Inhalation Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6)	
		On-Site: Current Commercial	Off-Site: Current Residential		On-Site: Current Commercial	Off-Site: Current Residential	On-Site: Current Commercial	Off-Site: Current Residential		On-Site: Current Commercial	Off-Site: Current Residential
Arsenic	A	9.2E-12	2.3E-11	1.5E+1	1.4E-10	3.5E-10					
Cadmium	B1	1.0E-12	2.6E-12	6.3E+0	6.5E-12	1.6E-11					
Chromium (III)							1.5E-9	3.2E-9	5.7E-7	2.6E-3	5.6E-3
Chromium (VI)	A	0.0E+0	0.0E+0	4.2E+1	0.0E+0	0.0E+0					
Ethylbenzene	D						6.4E-4	1.2E-3	1.0E+0	6.4E-4	1.2E-3
Fluorene	D										
Naphthalene	D										
Xylene (mixed isomers)	D										

Total Pathway Carcinogenic Risk = 1.5E-10 3.7E-10

Total Pathway Hazard Index = 3.3E-3 6.8E-3

Site Name: Vernon Briggs

Site Location: Matagorda Co.

Completed By: Jeri Sullivan

Date Completed: 1/15/1998

3 OF 10

PLAN B EXPOSURE CONCENTRATION AND INTAKE CALCULATION

INDOOR AIR EXPOSURE PATHWAYS

☒ (CHECKED IF PATHWAY IS ACTIVE)

VOLATILIZATION FROM SOILS:

Exposure Concentration

INDOOR VAPOR INHALATION

Constituents of Concern

	1) Source Medium	2) NAF Value (m ³ /kg)		3) Exposure Medium		4) Exposure Multiplier		5) Average Daily Intake Rate	
	Soil Conc. (mg/kg)	On-Site: Future Commercial	Receptor	Indoor Air: POE Conc. (mg/m ³) (1) / (2)	On-Site: Future Commercial	(IRxEFxED)/(BWxAT) (m ³ /kg-day)	On-Site: Future Commercial	(mg/kg-day) (3) X (4)	On-Site: Future Commercial
Arsenic	7.7E+0	NA		NA		7.0E-2		NA	
Cadmium	8.6E-1	NA		NA		7.0E-2		NA	
Chromium (III)	4.5E+2	NA		NA		2.0E-1		NA	
Chromium (VI)	0.0E+0	NA		NA		7.0E-2		NA	
Ethylbenzene	3.0E+2	5.0E+2		6.0E-1		2.0E-1		1.2E-1	
Fluorene	1.3E-1	1.2E+5		1.1E-6		2.0E-1		2.1E-7	
Naphthalene	3.8E-1	1.2E+3		3.3E-4		2.0E-1		6.4E-5	
Xylene (mixed isomers)	2.8E-2	5.0E+2		5.6E-5		2.0E-1		1.1E-5	

NOTE: ABS = Dermal absorption factor (dim)
AF = Adherence factor (mg/cm²)
AT = Averaging time (days)

BW = Body Weight (kg)
CF = Units conversion factor
ED = Exp. duration (yrs)

EF = Exposure frequency (days/yr)
ET = Exposure time (hrs/day)
IR = Intake rate (m³/day)

POE = Point of exposure
SA = Skin surface area (cm²)

STATE OF TEXAS - TNRCC RBCA SITE ASSESSMENT

Plan B Output Table 2

Site Name: Vernon Briggs

Site Location: Matagorda Co.

Completed By: Jeri Sullivan

Date Completed: 1/15/1998

4 OF 10

PLAN B EXPOSURE CONCENTRATION AND INTAKE CALCULATION

INDOOR AIR EXPOSURE PATHWAYS

☒ (CHECKED IF PATHWAY IS ACTIVE)

VOLATILIZATION FROM GW:

Exposure Concentration

INDOOR VAPOR INHALATION

Constituents of Concern

	1) Source Medium	2) NAF Value (m ³ /L) Receptor	3) Exposure Medium	4) Exposure Multiplier	5) Average Daily Intake Rate	TOTAL PATHWAY INTAKE (mg/kg-day)	
	Groundwater Conc. (mg/L)	On-Site: Future Commercial	Indoor Air: POE Conc. (mg/m ³) (1) / (2) On-Site: Future Commercial	(IRxExFxED)/(BWxAT) (m ³ /kg-day) On-Site: Future Commercial	(mg/kg-day) (3) X (4) On-Site: Future Commercial	(Sum intake values from soil and groundwater routes.) On-Site: Future Commercial	
Arsenic	2.5E-3	NA	NA	7.0E-2	NA	0.0E+0	
Cadmium	1.6E-2	NA	NA	7.0E-2	NA	0.0E+0	
Chromium (III)	2.5E-3	NA	NA	2.0E-1	NA	0.0E+0	
Chromium (VI)	2.5E-3	NA	NA	7.0E-2	NA	0.0E+0	
Ethylbenzene	2.5E-3	1.8E+2	1.4E-5	2.0E-1	2.6E-6	1.2E-1	
Fluorene	5.0E-3	1.0E+4	4.9E-7	2.0E-1	9.7E-8	3.1E-7	
Naphthalene	2.5E-3	7.1E+2	3.5E-6	2.0E-1	6.9E-7	6.5E-5	
Xylene (mixed isomers)	2.5E-3	1.7E+2	1.4E-5	2.0E-1	2.8E-6	1.4E-5	

NOTE: ABS = Dermal absorption factor (dim)
AF = Adherence factor (mg/cm²)
AT = Averaging time (days)

BW = Body Weight (kg)
CF = Units conversion factor
ED = Exp. duration (yrs)

EF = Exposure frequency (days/yr)
ET = Exposure time (hrs/day)
IR = Intake rate (m³/day)

POE = Point of exposure
SA = Skin surface area (cm²)

Site Name: Vernon Briggs

Site Location: Matagorda Co.

Completed By: Jeri Sullivan

Date Completed: 1/15/1998

2 OF 5

PLAN B PATHWAY RISK CALCULATION

INDOOR AIR EXPOSURE PATHWAYS

☒ (CHECKED IF PATHWAYS ARE ACTIVE)

Constituents of Concern	CARCINOGENIC RISK				TOXIC EFFECTS			
	(1) EPA Carcinogenic Classification	(2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site: Future Commercial	(3) Inhalation Slope Factor (mg/kg-day) ⁻¹	(4) Individual COC Risk (2) x (3) On-Site: Future Commercial	(5) Total Toxicant Intake Rate (mg/kg/day) On-Site: Future Commercial	(6) Inhalation Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6) On-Site: Future Commercial	
Arsenic	A	0.0E+0	1.5E+1	0.0E+0				
Cadmium	B1	0.0E+0	6.3E+0	0.0E+0				
Chromium (III)					0.0E+0	5.7E-7	0.0E+0	
Chromium (VI)	A	0.0E+0	4.2E+1	0.0E+0				
Ethylbenzene	D				1.2E-1	1.0E+0	1.2E-1	
Fluorene	D							
Naphthalene	D							
Xylene (mixed isomers)	D							

Total Pathway Carcinogenic Risk = 0.0E+0

Total Pathway Hazard Index = 1.2E-1

STATE OF TEXAS - TNRCC RBCA SITE ASSESSMENT

Plan B Output Table 5

Site Name: Vernon Briggs

Completed By: Jeri Sullivan

Site Location: Matagorda Co.

Date Completed: 1/15/1998

1 OF 2

**SOIL TARGET CONCENTRATIONS
(0 to 15 FT BGS)**

Target Risk (Class A & B): 1.0E-6 (On-Site Current and All Off-Site) 1.0E-4 (On-Site Future) ■ MCL exposure limit?

On-Site Land Use: Commercial

Target Risk (Class C): 1.0E-5 (On-Site Current and All Off-Site) 1.0E-4 (On-Site Future) □ PEL exposure limit?

Off-Site Land Use: Residential

Target Hazard Quotient: 1.0E+0

Groundwater DAF Option: Domenico - No Decay

Target Concentrations For Complete Exposure Pathways (mg/kg) ("x" if Applicable Pathway)

CONSTITUENTS OF CONCERN			Target Concentrations For Complete Exposure Pathways (mg/kg) ("x" if Applicable Pathway)											
			Representative Concentration	Soil Leaching to Groundwater: Groundwater Ingestion			Inhalation of Volatiles and Particulates			Soil Ingestion and Dermal Contact		Combined Ingest., Inhalation, and Dermal Contact		
CAS No.	Name	(mg/kg)		On-Site: Future	Off-Site: Current	MCL Based	On-Site: Current	Off-Site: Current	Const. Wkr. Future	On-Site: Current	Const. Wkr. Future	On-Site: Current	Const. Wkr. Future	
7440-38-2	Arsenic	7.7E+0	X	1.5E+2	2.2E+2	1.5E+2	5.5E+4	2.2E+4	>Res	7.6E+0 ■	6.4E+1	7.6E+0 ■	6.4E+1	
7440-43-9	Cadmium	8.6E-1		5.3E+1	8.0E+1	5.3E+1	>Res	>Res	>Res	2.0E+3	1.1E+2	2.0E+3	1.1E+2	
16065-83-1	Chromium (III)	4.5E+2		1.9E+7	2.9E+7	1.9E+7	1.7E+5	8.1E+4	8.5E+4	1.0E+6	2.1E+5	1.6E+5	6.1E+4	
18540-29-9	Chromium (VI)	0.0E+0		1.9E+2	2.8E+2	1.9E+2	>Res	>Res	>Res	2.0E+4	1.1E+3	2.0E+4	1.1E+3	
100-41-4	Ethylbenzene	3.0E+2		>Res	>Res	1.6E+2 ■	>Res	>Res	>Res	6.7E+3	1.9E+4	>Res	>Res	
86-73-7	Fluorene	1.3E-1		>Res	>Res	NA	>Res	>Res	>Res	1.3E+4	8.3E+3	>Res	>Res	
91-20-3	Naphthalene	3.8E-1		>Res	>Res	NA	>Res	>Res	>Res	2.0E+4	8.4E+3	>Res	>Res	
1330-20-7	Xylene (mixed isomers)	2.8E-2		>Res	>Res	5.7E+2	>Res	>Res	>Res	1.3E+5	3.8E+5	>Res	>Res	

■ indicates risk-based target concentration less than site representative concentration

>Res indicates risk-based target concentration greater than constituent residual saturation value

Site Name: Vernon Briggs

Completed By: Jeri Sullivan

Site Location: Matagorda Co.

Date Completed: 1/15/1998

2 OF 2

SOIL TARGET CONCENTRATIONS (0 to 15 FT BGS)

Target Risk (Class A & B): 1.0E-6 (On-Site Current and All Off-Site) 1.0E-4 (On-Site Future)

☒ MCL exposure limit?

On-Site Land Use: Commercial

Target Risk (Class C): 1.0E-5 (On-Site Current and All Off-Site) 1.0E-4 (On-Site Future)

☐ PEL exposure limit?

Off-Site Land Use: Residential

Target Hazard Quotient: 1.0E+0

Groundwater DAF Option: Domenico - No Decay

CONSTITUENTS OF CONCERN			Representative Concentration	Target Concentrations (mg/kg) ("x" if Applicable Pathway)													
				X	Soil Volatil. to Indoor Air	X	Soil Leaching to Groundwater: Groundwater Dermal Contact			X	Explosive Vapors	On-Site Exposure			Off-Site Exposure		
							On-Site: Future	On-Site:	Off-Site: Current			Const. Wkr. Future	(Based on 25% of LEL)	Applicable Target (mg/kg)	Target Exceeded?	Required CRF	Applicable Target (mg/kg)
CAS No.	Name	(mg/kg)															
7440-38-2	Arsenic	7.7E+0	>Res	NA	3.5E+2	7.3E+2	NA	7.6E+0	■	1.0E+0	2.2E+2	□	<1				
7440-43-9	Cadmium	8.6E-1	>Res	NA	1.1E+5	1.1E+3	NA	5.3E+1	□	<1	8.0E+1	□	<1				
16065-83-1	Chromium (III)	4.5E+2	9.0E+9	NA	>Res	4.0E+9	NA	6.1E+4	□	<1	8.1E+4	□	<1				
18540-29-9	Chromium (VI)	0.0E+0	>Res	NA	7.8E+4	7.7E+2	NA	1.9E+2	□	<1	2.8E+2	□	<1				
100-41-4	Ethylbenzene	3.0E+2	>Res	NA	>Res	>Res	>Res	6.7E+3	□	<1	>Res	□	<1				
86-73-7	Fluorene	1.3E-1	>Res	NA	>Res	>Res	NA	1.3E+4	□	<1	>Res	□	<1				
91-20-3	Naphthalene	3.8E-1	>Res	NA	>Res	>Res	>Res	2.0E+4	□	<1	>Res	□	<1				
1330-20-7	Xylene (mixed isomers)	2.8E-2	>Res	NA	>Res	>Res	>Res	1.3E+5	□	<1	>Res	□	<1				

☒ indicates risk-based target concentration less than site representative concentration

>Res indicates risk-based target concentration greater than constituent residual saturation value

STATE OF TEXAS - TNRCC RBCA SITE ASSESSMENT

Plan B Output Table 6

Site Name: Vernon Briggs
Site Location: Matagorda Co.

Completed By: Jeri Sullivan
Date Completed: 1/15/1998

1 OF 2

GROUNDWATER TARGET CONCENTRATIONS

Target Risk (Class A & B): 1.0E-6 (On-Site Current and All Off-Site) 1.0E-4 (On-Site Future)

☒ MCL exposure limit?

On-Site Land Use: Commercial

Target Risk (Class C): 1.0E-5 (On-Site Current and All Off-Site) 1.0E-4 (On-Site Future)

☐ PEL exposure limit?

Off-Site Land Use: Residential

Target Hazard Quotient: 1.0E+0

Groundwater DAF Option: Domenico - No Decay

Target Concentrations For Complete Exposure Pathways (mg/L) ("x" if Applicable Pathway)

CONSTITUENTS OF CONCERN			X	Groundwater Ingestion			X	GW Volatil. to Indoor Air			X	GW Volatilization to Outdoor Air			X	Groundwater Dermal Contact		
CAS No.	Name	Representative Concentration (mg/L)		On-Site: Future	Off-Site: Current	MCL		On-Site: Future	On-Site: Future	Off-Site: Current	Const. Wkr. Future		On-Site: Future	On-Site: Future	Off-Site: Current	Const. Wkr. Future		
7440-38-2	Arsenic	2.5E-3		5.0E-2	7.6E-2	5.0E-2		>Sol	>Sol	>Sol	>Sol		NA	1.2E-1	2.5E-1			
7440-43-9	Cadmium	1.6E-2		5.0E-3	7.6E-3	5.0E-3		>Sol	>Sol	>Sol	>Sol		NA	1.0E+1	1.0E-1			
16065-83-1	Chromium (III)	2.5E-3		1.0E-1	1.5E-1	1.0E-1		>Sol	>Sol	>Sol	>Sol		NA	2.1E+3	2.1E+1			
18540-29-9	Chromium (VI)	2.5E-3		1.0E-1	1.5E-1	1.0E-1		>Sol	>Sol	>Sol	>Sol		NA	4.2E+1	4.1E-1			
100-41-4	Ethylbenzene	2.5E-3		7.0E-1	>Sol	7.0E-1		>Sol	>Sol	>Sol	>Sol		NA	>Sol	>Sol			
86-73-7	Fluorene	5.0E-3		>Sol	>Sol	NA		>Sol	>Sol	>Sol	>Sol		NA	>Sol	>Sol			
91-20-3	Naphthalene	2.5E-3		4.1E+0	2.2E+0	NA		>Sol	>Sol	>Sol	>Sol		NA	>Sol	1.6E+0			
1330-20-7	Xylene (mixed isomers)	2.5E-3		1.0E+1	>Sol	1.0E+1		>Sol	>Sol	>Sol	>Sol		NA	>Sol	>Sol			

■ indicates risk-based target concentration less than site representative concentration

>Sol indicates risk-based target concentration greater than constituent solubility

Site Name: Vernon Briggs

Completed By: Jeri Sullivan

Site Location: Matagorda Co.

Date Completed: 1/15/1998

2 OF 2

GROUNDWATER TARGET CONCENTRATIONS

On-Site Land Use: Commercial

Off-Site Land Use: Residential

Groundwater DAF Option: Domenico - No Decay

CONSTITUENTS OF CONCERN			On-Site Exposure			Off-Site Exposure		
CAS No.	Name	Representative Concentration (mg/L)	Applicable Target (mg/L)	Target Exceeded?	Required CRF	Applicable Target (mg/L)	Target Exceeded?	Required CRF
7440-38-2	Arsenic	2.5E-3	5.0E-2	☐	<1	7.6E-2	☐	<1
7440-43-9	Cadmium	1.6E-2	5.0E-3	☒	3.0E+0	7.6E-3	☒	2.0E+0
16065-83-1	Chromium (III)	2.5E-3	1.0E-1	☐	<1	1.5E-1	☐	<1
18540-29-9	Chromium (VI)	2.5E-3	1.0E-1	☐	<1	1.5E-1	☐	<1
100-41-4	Ethylbenzene	2.5E-3	7.0E-1	☐	<1	>Sol	☐	<1
86-73-7	Fluorene	5.0E-3	>Sol	☐	<1	>Sol	☐	<1
91-20-3	Naphthalene	2.5E-3	1.6E+0	☐	<1	2.2E+0	☐	<1
1330-20-7	Xylene (mixed isomers)	2.5E-3	1.0E+1	☐	<1	>Sol	☐	<1

■ indicates risk-based target conc. less than site representative conc.

>Sol indicates risk-based target conc. greater than constituent solubility

APPENDIX D—NORM ANALYTICAL DATA

CHAIN OF CUSTODY RECORD

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).



1726 Wooddale Court • Baton Rouge, Louisiana 70806

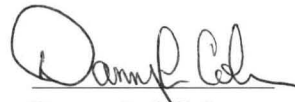
1 (800) 401-4277 • Fax (504) 927-6822

American Radiation Services, Inc.

Laboratory Analysis Report

Prepared For:

**Bureau of Economic Geology
The University of Texas at Austin
Ms. E. J. Sullivan
University Station, Box X
Austin, TX 78713-8924
Phone: 512-471-6285
Fax: 512-471-0140**


Quality Assurance Review
**Danny L. Coleman
Laboratory Manager**

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.



1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (504) 927-6822

ARS Tracking Number: ARS-97-0512

P.O. Number:

Client I.D.: # 2036

ARS Sample I.D.: ARS-97-1813

Date Sampled: 5/22/97

Date Received: 6/3/97

Time Sampled: 1600

Time Received: 1500

Type of Sample: Solid

Date of Report: 6/6/97

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	104.10	5.67	pCi/gm	3.851	0.210	Bq/gm	EPA 901.1M	6/6/97 1117	BL
Ra-228	33.57	0.82	pCi/gm	1.242	0.030	Bq/gm	EPA 901.1M	6/6/97 1117	BL
Pb-210	16.74	4.21	pCi/gm	0.619	0.156	Bq/gm	EPA 901.1M	6/6/97 1117	BL
Total Activity	620.73	N/A	pCi/gm	22.964	N/A	Bq/gm	EPA 901.1M	6/6/97 1117	BL

Notes: Sample originated from project name: Vernon Briggs RRC at station location: NORM 1.
Sample was taken and relinquished by Ms. E.J. Sullivan with the Bureau of Economic Geology at the University of Texas.

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.



1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (504) 927-6822

ARS Tracking Number: ARS-97-0512

P.O. Number:

Client I.D.: # 2037

ARS Sample I.D.: ARS-97-1814

Date Sampled: 5/22/97

Date Received: 6/3/97

Time Sampled: 1620

Time Received: 1500

Type of Sample: Solid

Date of Report: 6/6/97

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	26.67	3.28	pCi/gm	0.987	0.121	Bq/gm	EPA 901.1M	6/6/97 1154	BL
Ra-228	10.86	0.66	pCi/gm	0.402	0.024	Bq/gm	EPA 901.1M	6/6/97 1154	BL
Pb-210	4.01	2.31	pCi/gm	0.148	0.085	Bq/gm	EPA 901.1M	6/6/97 1154	BL
Total Activity	177.42	N/A	pCi/gm	6.564	N/A	Bq/gm	EPA 901.1M	6/6/97 1154	BL

Notes: Sample originated from project name: Vernon Briggs RRC at station location: NORM 2.
Sample was taken and relinquished by Ms. E.J. Sullivan with the Bureau of Economic Geology at the University of Texas.

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.



1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (504) 927-6822

Notes:

Comments:

- 1.0) Soil and Sludge analysis are reported on a wet basis or an as received basis unless otherwise indicated.
- 2.0) The data in this report are within the limits of uncertainty specified in the reference method unless specified.
- 3.0) Modified analysis procedures are procedures that are modified to meet the certain specifications. An example may be the use of a water method to analyze a solid matrix due to the lack of an officially recognized procedure for the analysis of the solid matrix.
- 4.0) Derived Air Concentrations and Effluent Release Concentrations are obtained from 10 CFR 20 Appendix B
- 5.0) Total activity is actually total gamma activity and is determined utilizing the prominent gamma emitters from the naturally occurring radioactive decay chains and other prominent radioactive nuclides. Total activity may be lower than actual total activity due to the extent of secular equilibrium achieved in the various decay chains at the time of analysis. The total activity is not representative of nuclides that emit solely alpha or beta particles.
- 6.0) Ra-228 is determined via secular equilibrium with its daughter, Actinium 228. (Gamma Spectroscopy only)
- 7.0) U-238 is determined via secular equilibrium with its daughter, Thorium 234. (Gamma Spectroscopy only)
- 8.0) All Gamma spectroscopy was performed utilizing high purity germanium detectors (HPGE).

Method References:

- 1.0) EPA 600/4-80-032, Prescribed Procedures for the Measurement of Radioactivity in Drinking Water, August 1980.
- 2.0) Standard Methods for the Examination of Water and Waste Water, 18th, 1992
- 3.0) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, (9/86). (Updated through 1995)
- 4.0) EPA 600/4/79-020, Methods for Chemical Analysis of Water and Waste, March 1983.
- 5.0) HASL 300

Definitions:

- | | | |
|-------|-----------------|--|
| 1.0) | BDL | Analyte not detected because the value was below the detection limit. |
| 2.0) | ND | Not detected above the detection limit. |
| 3.0) | Detection Limit | The minimum amount of the analyte that ARS can detect utilizing the specific analysis. |
| 4.0) | B | Method Blank |
| 5.0) | D | Method Duplicate |
| 6.0) | MS | Matrix Spike |
| 7.0) | S | Spike |
| 8.0) | RS | Reference Spike |
| 9.0) | *SC | Subcontracted out to another qualified laboratory |
| 10.0) | NR | Not Referenced |

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

CHAIN OF CUSTODY RECORD

[illegible]

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).



1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (504) 927-6822

American Radiation Services, Inc.

Laboratory Analysis Report

Prepared For:

**Bureau of Economic Geology
Dr. E. J. Sullivan
University Station, Box X
Austin, TX 78713-8924
Phone: 512-471-6285
Fax: 512-471-0140**



Quality Assurance Review



**Danny L. Coleman
Laboratory Manager**

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.



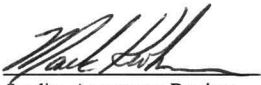
1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (504) 927-6822

ARS Tracking Number:	ARS-97-0756	P.O. Number:	Proj. Vernon Briggs
Client I.D.:	2200	ARS Sample I.D.:	ARS-97-2896
Date Sampled:	8/18/97	Date Received:	8/21/97
Time Sampled:	1130	Time Received:	0928
Type of Sample:	Composite	Date of Report:	8/27/97

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	4.88	1.08	pCi/gm	0.181	0.040	Bq/gm	EPA 901.1M	8/22/97 0310	JB
Ra-228	1.50	0.23	pCi/gm	0.055	0.009	Bq/gm	EPA 901.1M	8/22/97 0310	JB
Pb-210	1.01	0.56	pCi/gm	0.037	0.021	Bq/gm	EPA 901.1M	8/22/97 0310	JB
Total Activity	30.59	N/A	pCi/gm	1.132	N/A	Bq/gm	EPA 901.1M	8/22/97 0310	JB

Notes: 150' X 150' grid


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.



1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (504) 927-6822

ARS Tracking Number: ARS-97-0756 P.O. Number: Proj. Vernon Briggs
Client I.D.: 2201 ARS Sample I.D.: ARS-97-2897
Date Sampled: 8/18/97 Date Received: 8/21/97
Time Sampled: 1145 Time Received: 0928
Type of Sample: Composite Date of Report: 8/27/97

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	2.59	0.78	pCi/gm	0.096	0.029	Bq/gm	EPA 901.1M	8/22/97 0342	JB
Ra-228	1.32	0.21	pCi/gm	0.049	0.008	Bq/gm	EPA 901.1M	8/22/97 0342	JB
Pb-210	<0.27	N/A	pCi/gm	<0.010	N/A	Bq/gm	EPA 901.1M	8/22/97 0342	JB
Total Activity	24.02	N/A	pCi/gm	0.889	N/A	Bq/gm	EPA 901.1M	8/22/97 0342	JB
Notes: 100m X 100m grid									


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.



1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (504) 927-6822

Notes:

Comments:

- 1.0) Soil and Sludge analysis are reported on a wet basis or an as received basis unless otherwise indicated.
- 2.0) The data in this report are within the limits of uncertainty specified in the reference method unless specified.
- 3.0) Modified analysis procedures are procedures that are modified to meet the certain specifications. An example may be the use of a water method to analyze a solid matrix due to the lack of an officially recognized procedure for the analysis of the solid matrix.
- 4.0) Derived Air Concentrations and Effluent Release Concentrations are obtained from 10 CFR 20 Appendix B
- 5.0) Total activity is actually total gamma activity and is determined utilizing the prominent gamma emitters from the naturally occurring radioactive decay chains and other prominent radioactive nuclides. Total activity may be lower than actual total activity due to the extent of secular equilibrium achieved in the various decay chains at the time of analysis. The total activity is not representative of nuclides that emit solely alpha or beta particles.
- 6.0) Ra-228 is determined via secular equilibrium with its daughter, Actinium 228. (Gamma Spectroscopy only)
- 7.0) U-238 is determined via secular equilibrium with its daughter, Thorium 234. (Gamma Spectroscopy only)
- 8.0) All Gamma spectroscopy was performed utilizing high purity germanium detectors (HPGE).

Method References:

- 1.0) EPA 600/4-80-032, Prescribed Procedures for the Measurement of Radioactivity in Drinking Water, August 1980.
- 2.0) Standard Methods for the Examination of Water and Waste Water, 18th, 1992
- 3.0) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, (9/86). (Updated through 1995)
- 4.0) EPA 600/4-79-020, Methods for Chemical Analysis of Water and Waste, March 1983.
- 5.0) HASL 300

Definitions:

- | | | |
|-------|-----------------|--|
| 1.0) | BDL | Analyte not detected because the value was below the detection limit. |
| 2.0) | ND | Not detected above the detection limit. |
| 3.0) | Detection Limit | The minimum amount of the analyte that ARS can detect utilizing the specific analysis. |
| 4.0) | B | Method Blank |
| 5.0) | D | Method Duplicate |
| 6.0) | MS | Matrix Spike |
| 7.0) | S | Spike |
| 8.0) | RS | Reference Spike |
| 9.0) | *SC | Subcontracted out to another qualified laboratory |
| 10.0) | NR | Not Referenced |

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.