

1R - 426-54

REPORTS

DATE:

10/17/2002

IR-426-54

FINAL REPORT

**RICE OPERATING COMPANY
JUNCTION BOX FINAL REPORT**

BOX LOCATION

SWD SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE	COUNTY	BOX DIMENSIONS - FEET		
BD	O-17-2	O	17	21 S	37 E	Lea	Length no box	Width n/a	Depth n/a

LAND TYPE: BLM _____ STATE _____ FEE LANDOWNER Millard-Deck Estate OTHER _____

Depth to Groundwater 70 feet NMOCD SITE ASSESSMENT RANKING SCORE: 10

Date Started 9/6/2002 Date Completed 9/18/2002 OCD Witness No

Soil Excavated 460 cubic yards Excavation Length 30 Width 30 Depth 14 feet

Soil Disposed 0 cubic yards Offsite Facility n/a Location n/a

FINAL ANALYTICAL RESULTS: Sample Date 9/12/2002 Sample Depth 14' bgs

Procure 5-point composite sample of bottom and 4-point composite sample of sidewalls. TPH, BTEX and Chloride laboratory test results completed by using an approved lab and testing procedures pursuant to NMOCD guidelines.

Sample Location	Benzene mg/kg	Toluene mg/kg	Ethyl Benzene mg/kg	Total Xylenes mg/kg	GRO mg/kg	DRO mg/kg	Chlorides mg/kg
BOTTOM	0.025	0.025	0.025	0.025	<10.0	15.4	975
SIDEWALLS	0.025	0.025	0.025	0.025	<10.0	<10.0	922
REMEDIATED	0.025	0.025	0.025	0.025	<10.0	481	1350

General Description of Remedial Action: Directly below the junction location,
chloride impact diminished at 12' bgs. A 30' x 30' area was excavated to a depth of 14' and the soil was landfarmed on site. The location was backfilled up to 4' bgs where a 1' compacted clay barrier was installed that also extended to jct. O-17 (see attached diagram). The clay layer will slow migration of the remaining chlorides in the backfill. Since the location is no longer a junction, a box is not required here. The backfill was contoured to mimic the natural landscape. The surface is expected to re-vegetate at a normal rate.

CHLORIDE FIELD TESTS

LOCATION	DEPTH	ppm
Vertical	6'	585
	8'	1220
	10'	415
	12'	190
Wall Comp.	13	1000
Bottom Comp.	14	810

cc: lab results, diagram, photos.

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

DATE 10/17/2002 PRINTED NAME Kristin Farris

SIGNATURE Kristin Farris TITLE Project Scientist

Diagram illustrating the cross-section of a well casing and liner. The casing is divided into sections with the following dimensions and labels:

- Top section: 25' (labeled O-17)
- Middle section: 14' (labeled 1350 ppm Cl-)
- Bottom section: 30' (labeled O-17-2)

The casing is labeled with "W" (West) on the left and "E" (East) on the right. The liner is labeled "1' clay liner". The casing material is labeled "1350 Cl-" and "1340 Cl-". The casing is also labeled "922 Cl-".

0-17-2
bottom + wall

ANALYTICAL REPORT

Prepared for:

DEREK ROBINSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Project: Rice

PO#:

Order#: G0204511

Report Date: 09/19/2002

Certificates

US EPA Laboratory Code TX00158

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768
366-0804

Order#: G0204511
Project:
Project Name: Rice
Location: None Given

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

<u>Lab ID:</u>	<u>Sample :</u>	<u>Matrix:</u>	<u>Date / Time</u>	<u>Date / Time</u>	<u>Container</u>	<u>Preservative</u>
			<u>Collected</u>	<u>Received</u>		
0204511-01	M-9 Last Remed. Comp.	SOIL	9/12/02	9/13/02 8:20	4 oz glass	Ice
	<u>Lab Testing:</u>	Rejected: No		Temp: 18.0 C		
	8015M					
	8021B/5030 BTEX					
	Chloride					
0204511-02	O-17-2 Bottom Comp.	SOIL	9/12/02	9/13/02 8:20	4 oz glass	Ice
	<u>Lab Testing:</u>	Rejected: No		Temp: 18.0 C		
	8015M					
	8021B/5030 BTEX					
	Chloride					
0204511-03	O-17-2Wall Comp.	SOIL	9/12/02	9/13/02 8:20	4 oz glass	Ice
	<u>Lab Testing:</u>	Rejected: No		Temp: 18.0 C		
	8015M					
	8021B/5030 BTEX					
	Chloride					

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DEREK ROBINSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Order#: G0204511
Project:
Project Name: Rice
Location: None Given

Lab ID: 0204511-01
Sample ID: M-9 Last Remed. Comp.

8015M

Method	Date	Date	Sample	Dilution	Analyst	Method
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>		
		9/14/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	18.1	10.0
DRO, >C12-C35	400	10.0
TOTAL, C6-C35	418	10.0

8021B/5030 BTEX

Method	Date	Date	Sample	Dilution	Analyst	Method
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>		
0003176-02		9/18/02 16:50	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	<0.025	0.025
Toluene	<0.025	0.025
p/m-Xylene	<0.025	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	92%	80	120
Bromofluorobenzene	96%	80	120

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DEREK ROBINSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Order#: G0204511
Project:
Project Name: Rice
Location: None Given

Lab ID: 0204511-02
Sample ID: O-17-2 Bottom Comp.

8015M

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>		
		9/14/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

8021B/5030 BTEX

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>		
0003176-02		9/18/02 17:12	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	<0.025	0.025
Toluene	<0.025	0.025
p/m-Xylene	<0.025	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	83%	80	120
Bromofluorobenzene	85%	80	120

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DEREK ROBINSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Order#: G0204511
Project:
Project Name: Rice
Location: None Given

Lab ID: 0204511-03
Sample ID: O-17-2Wall Comp.

8015M

Method <u>Blank</u>	Date <u>Prepared</u>	Date <u>Analyzed</u>	Sample <u>Amount</u>	Dilution <u>Factor</u>	Analyst	Method
		9/14/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	15.4	10.0
TOTAL, C6-C35	15.4	10.0

8021B/5030 BTEX

Method <u>Blank</u>	Date <u>Prepared</u>	Date <u>Analyzed</u>	Sample <u>Amount</u>	Dilution <u>Factor</u>	Analyst	Method
0003176-02		9/18/02 18:12	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	<0.025	0.025
Toluene	<0.025	0.025
p/m-Xylene	<0.025	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	102%	80	120
Bromofluorobenzene	96%	80	120

Approval: Raland K Tuttle 9-20-02
Raland K. Tuttle, Lab Director, QA Officer Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DEREK ROBINSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Order#: G0204511
Project:
Project Name: Rice
Location: None Given

Lab ID: 0204511-01
Sample ID: M-9 Last Remed. Comp.

Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	390	mg/kg	1	20	9253	9/13/02	SB

Lab ID: 0204511-02
Sample ID: O-17-2 Bottom Comp.

Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	922	mg/kg	1	20	9253	9/13/02	SB

Lab ID: 0204511-03
Sample ID: O-17-2Wall Comp.

Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	975	mg/kg	1	20	9253	9/13/02	SB

Approval:

Raland K. Tuttle 9-20-02
Raland K. Tuttle, Lab Director, QA Officer
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8015M

Order#: G0204511

BLANK	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0003156-02			<10.0		
MS	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0204502-08	0	952	1080	113.4%	
MSD	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0204502-08	0	952	1140	119.7%	5.4%
SRM	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0003156-05		1000	1190	119.9%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8021B/5030 BTEX

Order#: G0204511

BLANK	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0003176-02			<0.025		
Ethylbenzene-mg/kg		0003176-02			<0.025		
Toluene-mg/kg		0003176-02			<0.025		
p/m-Xylene-mg/kg		0003176-02			<0.025		
o-Xylene-mg/kg		0003176-02			<0.025		
MS	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0204517-03	0	0.1	0.103	103.0%	
Ethylbenzene-mg/kg		0204517-03	0	0.1	0.108	108.0%	
Toluene-mg/kg		0204517-03	0	0.1	0.107	107.0%	
p/m-Xylene-mg/kg		0204517-03	0	0.2	0.224	112.0%	
o-Xylene-mg/kg		0204517-03	0	0.1	0.105	105.0%	
MSD	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0204517-03	0	0.1	0.105	105.0%	1.9%
Ethylbenzene-mg/kg		0204517-03	0	0.1	0.111	111.0%	2.7%
Toluene-mg/kg		0204517-03	0	0.1	0.110	110.0%	2.8%
p/m-Xylene-mg/kg		0204517-03	0	0.2	0.225	112.5%	0.4%
o-Xylene-mg/kg		0204517-03	0	0.1	0.109	109.0%	3.7%
SRM	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0003176-05		0.1	0.102	102.0%	
Ethylbenzene-mg/kg		0003176-05		0.1	0.105	105.0%	
Toluene-mg/kg		0003176-05		0.1	0.107	107.0%	
p/m-Xylene-mg/kg		0003176-05		0.2	0.219	109.5%	
o-Xylene-mg/kg		0003176-05		0.1	0.104	104.0%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

Test Parameters

Order#: G0204511

BLANK	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0003136-01			<20.0		
MS	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0204511-02	922	1000	1914	99.2%	
MSD	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0204511-02	922	1000	1932	101.1%	0.9%
SRM	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0003136-04		5000	4960	99.2%	

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:

Debie Robinson

Project Name:

RICE

Company Name

RE commenta!

Project #:

Company Address:

City/State/Zip:

PO #:

Telephone No:

Fax No:

Sampler Signature:[illegible]

0-17 + 0-17-2
Remediated

ANALYTICAL REPORT

Prepared for:

LOGAN ANDERSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Project: Rice
PO#:
Order#: G0204605
Report Date: 09/30/2002

Certificates

US EPA Laboratory Code TX00158

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768
366-0804

Order#: G0204605
Project:
Project Name: Rice
Location: O-17

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

<u>Lab ID:</u>	<u>Sample :</u>	<u>Matrix:</u>	<u>Date / Time</u> <u>Collected</u>	<u>Date / Time</u> <u>Received</u>	<u>Container</u>	<u>Preservative</u>
0204605-01	Remediated Composite Pile	SOIL	9/24/02 14:00	9/25/02 8:00	4 oz glass	Ice
	<u>Lab Testing:</u>	Rejected: No		Temp: 13 C		
	8015M					
	8021B/5030 BTEX					
	Chloride					

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

LOGAN ANDERSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Order#: G0204605
Project:
Project Name: Rice
Location: O-17

Lab ID: 0204605-01
Sample ID: Remediated Composite File

8015M

Method <u>Blank</u>	Date <u>Prepared</u>	Date <u>Analyzed</u>	Sample <u>Amount</u>	Dilution <u>Factor</u>	Analyst	Method
		9/25/02	1	1	CK	8015M

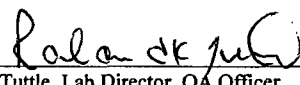
Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	481	10.0
TOTAL, C6-C35	481	10.0

8021B/5030 BTEX

Method <u>Blank</u>	Date <u>Prepared</u>	Date <u>Analyzed</u>	Sample <u>Amount</u>	Dilution <u>Factor</u>	Analyst	Method
0003253-02		9/29/02 21:04	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	<0.025	0.025
Toluene	<0.025	0.025
p/m-Xylene	<0.025	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	95%	80	120
Bromofluorobenzene	96%	80	120

Approval:  9-30-02
Raland K. Tuttle, Lab Director, QA Officer
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

Date

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

LOGAN ANDERSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Order#: G0204605
Project:
Project Name: Rice
Location: O-17

Lab ID: 0204605-01
Sample ID: Remediated Composite Pile

Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	1350	mg/kg	1	20	9253	9/27/02	SB

Approval: Raland K. Tuttle 9-30-02
Raland K. Tuttle, Lab Director, QA Officer Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8015M

Order#: G0204605

BLANK	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0003235-02			<10.0		
CONTROL	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0003235-03		952	1120	117.6%	
CONTROL DUP	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0003235-04		952	1200	126.1%	6.9%
SRM	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0003235-05		1000	1220	122.%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8021B/5030 BTEX

Order#: G0204605

BLANK	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0003253-02			<0.025		
Ethylbenzene-mg/kg		0003253-02			<0.025		
Toluene-mg/kg		0003253-02			<0.025		
p/m-Xylene-mg/kg		0003253-02			<0.025		
o-Xylene-mg/kg		0003253-02			<0.025		
MS	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0204592-05	0	0.1	0.098	98.%	
Ethylbenzene-mg/kg		0204592-05	0	0.1	0.100	100.%	
Toluene-mg/kg		0204592-05	0	0.1	0.100	100.%	
p/m-Xylene-mg/kg		0204592-05	0	0.2	0.212	106.%	
o-Xylene-mg/kg		0204592-05	0	0.1	0.100	100.%	
MSD	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0204592-05	0	0.1	0.099	99.%	1.%
Ethylbenzene-mg/kg		0204592-05	0	0.1	0.102	102.%	2.%
Toluene-mg/kg		0204592-05	0	0.1	0.102	102.%	2.%
p/m-Xylene-mg/kg		0204592-05	0	0.2	0.217	108.5%	2.3%
o-Xylene-mg/kg		0204592-05	0	0.1	0.103	103.%	3.%
SRM	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0003253-05		0.1	0.100	100.%	
Ethylbenzene-mg/kg		0003253-05		0.1	0.103	103.%	
Toluene-mg/kg		0003253-05		0.1	0.103	103.%	
p/m-Xylene-mg/kg		0003253-05		0.2	0.218	109.%	
o-Xylene-mg/kg		0003253-05		0.1	0.103	103.%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

Test Parameters

Order#: G0204605

BLANK	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0003244-01			<20.0		
MS	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0204605-01	1350	1000	2340	99.9%	
MSD	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0204605-01	1350	1000	2320	97.9%	0.9%
SRM	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0003244-04		5000	4960	99.2%	

BD jct. O-17-2



Impact Excavation



Clay liner connected to O-17



Backfilled

BD O-17-2 jct. box



Clay Liner Connecting Sites