

SOAH DOCKET NO. 582-15-2082  
TCEQ DOCKET NO. 2015-0069-MSW

APPLICATION OF 130	§	BEFORE THE STATE OFFICE
ENVIRONMENTAL PARK, LLC	§	OF
FOR PROPOSED PERMIT NO.	§	ADMINISTRATIVE HEARINGS
2383	§	

PROTESTANTS' EXHIBIT 4

PREFILED TESTIMONY OF

LESLIE HOLDER

ON BEHALF OF PROTESTANT EPICC

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## INDEX OF EXHIBITS

Exhibit No.	Description
Exhibit 4-A	Email dated April 6, 2016 (with attachments)

1 **I. INTRODUCTION**

2 Q: Please state your name.

3 A: Leslie Holder.

4 Q: Please state your address.

5 A: 575 Comanche Way, Dale, Texas 78616.

6 Q: Please describe your occupation.

7 A: Legal Administrative Assistant.

8 Q: Are you a member of the organization Environmental Protection in the Interest of  
9 Caldwell County, or EPICC?

10 A: Yes.

11 Q: What is the mission of EPICC?

12 A: To promote the protection of the environment and quality of life in Caldwell  
13 County for ours and future generations.

14 Q: Please explain your role, if any, with the organization.

15 A: I am a board member of EPICC and participate in all board meetings and activities  
16 by the organization. I am also webmaster of the EPICC website. My duties are to  
17 manage the website and to respond to any comments, questions or requests that  
18 may be posted on the website such as requests for yard signs, to sign petitions and  
19 become members.

20 **II. SUMMARY OF CONCERNS REGARDING PROPOSED LANDFILL**

21 Q: As a board member, are you familiar with the concerns of EPICC regarding 130  
22 Environmental Park's application for a landfill permit?

1 A: Yes.

2 Q: How are you familiar with the concerns of EPICC?

3 A: I became a member of EPICC in late 2013. I was also involved in the formation  
4 of EPICC as a non-profit organization and then later was elected to the position of  
5 Treasurer. Shortly after that I assumed the duties of webmaster.

6 Q: Please describe EPICC's overall concerns with the application for the landfill  
7 permit.

8 A: Threat to Residents Living in the Vicinity of the Landfill. My family and I live  
9 less than five miles from the proposed landfill site. And EPICC is comprised of  
10 many landowners who also reside within close proximity of the landfill site and in  
11 fact, whose property is adjacent to or across the street. EPICC's fears are based on  
12 extensive research by its members, and we have concluded that this landfill would  
13 adversely affect not only the health of people and livestock, but could put lives in  
14 danger. Ann Collier who lives directly across the street from the landfill site,  
15 already suffers with respiratory ailments. With her compromised immune system,  
16 her health issues could be exacerbated by emissions from the landfill..

17 Traffic. Based on our research, we (EPICC members) have learned that the  
18 intersection at FM1185 and Hwy. 183 is considered to be one of the deadliest  
19 intersections in the State of Texas. [does she have a source for this?] The speed  
20 limit along Hwy. 183 is 60 miles per hour. As one approaches the entrance to the  
21 landfill site traveling north along Hwy. 183, visibility suddenly drops off because  
22 the road slopes downward. Therefore, garbage trucks exiting and entering the



1 highway would not be immediately visible until drivers come over the rise. I have  
2 personally travelled along this stretch of the road on many, many occasions, and  
3 am quite familiar with the slope of the highway and the visibility issues in this  
4 area. Vehicles traveling at 60 miles per hour, coupled with slow-moving garbage  
5 trucks entering and exiting the highway is a recipe for disaster. Eventually  
6 hundreds of garbage trucks would be required to access the landfill, so I'm  
7 concerned about the potential for an increase in serious traffic accidents.

8 Floodplain/Flooding. The potential for flooding exists as a large portion of this  
9 site is a floodplain. I have personally driven past this site after a heavy rain and  
10 have not only seen water gushing directly from the site, but have seen standing  
11 water on the site for weeks after a heavy rain. I, and members of EPICC, are  
12 concerned that the development of the landfill will result in an increase in the  
13 potential for even greater flooding. Also, because the access road to the landfill  
14 would have to cross a floodplain, I'm concerned about accessibility during major  
15 rain events. What if there is an emergency at the landfill during a flooding event,  
16 and the road becomes inaccessible? Contamination of the nearby aquifers is  
17 another major concern for members of EPICC. If the risk of contaminating our  
18 aquifers exists - however small that risk may be - then that risk needs to be  
19 eliminated. It's not worth it.

20 Trash Pile. It's my understanding that 130 Environmental Park intends to pile the  
21 trash on top of the ground to an eventual height of 175 feet high. It would be the  
22 highest manmade structure in the county. The obvious concern here is the

1 potential for contaminants to migrate from the landfill site through the air, . On  
2 windy days, trash could be blown for miles, in addition to the smell of rotting,  
3 toxic trash. If 130 Environmental Park decides to use alternative daily cover,  
4 instead of soil cover, which is an option they have left open in their application,  
5 then, the potential for windblown waste and odors would almost certainly  
6 increase. Finally, I am concerned about scavenging at the landfill site—scavenging  
7 by rodents, feral hogs, and birds. Feral hogs are a real problem in this area, and it  
8 is almost impossible to keep feral hogs out of one's property.

9 Economic Suicide. Putting a landfill at this location where the potential for the  
10 greatest growth exists is economic suicide for Lockhart. Austin is one of the  
11 fastest growing cities in the United States and so Caldwell County is destined to  
12 benefit from this growth but only if we don't put a 175' high pile of unsightly  
13 trash at the north entrance to Lockhart. Property values will decrease and the kind  
14 of businesses that would positively add to our community, will choose to go  
15 elsewhere.

16 Representatives for 130 Environmental Park have publicly stated that that  
17 properties in the vicinity of this landfill would actually increase in value, with no  
18 support for this claim at all. This shows this company's brashness to make  
19 ridiculously false statements on record and assume that Caldwell County residents  
20 are so ignorant and uninformed that we will believe them.

21 Q: Are your concerns similar to those of EPICC as you understand the concerns of  
22 the officers and members of the organization?

1 A: Yes.

2 Q: What is the basis for your and EPICC's concerns?

3 A:

4 For one, Feather Wilson, a geologist with the Plum Creek Conservation District,  
5 has publicly stated that this is not a good place for a landfill, and the existence of  
6 so much water at this site, such as floodplain, aquifers, and creeks, confirms this is  
7 true. Also, our concern about the suitability of the subsurface soils at the proposed  
8 landfill site, and their potential to transmit contaminants, has been verified by a  
9 gentleman who is a senior geologist with NRCS. He became aware of EPICC's  
10 fight against this landfill through information posted on our website. Thereafter  
11 he reached out to us by email and sent us photos, maps, and other data, along with  
12 his impressions about the site. He acknowledged that the site includes permeable  
13 soils and even the existence of a fault line that runs directly through the area.

14 Q: Can you please identify what is marked as Exhibit 4-A?

15 A: Yes, this is an e-mail from early April 2016 that was received through EPICC's  
16 email.

17 Q: Can you briefly describe the content of the letter and how it relates to the concerns  
18 of EPICC?

19 A: First let me say that I am not a geologist or an expert on topics related to the  
20 subsurface; however, this letter states that the subsurface of the proposed landfill  
21 site is not conducive for a municipal solid waste landfill. The individual writes,  
22 and I quote: "There are lenses of sand within this unit that have permeability. This



1 means leachate has pathways to enter the subsurface. Further, there is faulting in  
2 the area. This means there is high angle to vertical fracturing that further increases  
3 permeability.” This statement reinforces what other EPICC members and local  
4 landowners have been saying throughout this landfill permitting process. He also  
5 included photos of soil samples from holes he drilled in the spillway for the dam.  
6 He noted that the soils in the photographs indicate permeable zones.

7 **PROTESTANTS OFFER EXHIBIT 4-A**

8  
9 **III. CONCLUSION**

10 Q: What are you asking the Commission to do with this application?

11 A: Deny it.

12 Q: Does this conclude your testimony?

13 A: Yes, although I reserve the right to supplement this testimony.





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**Email from NRCS geologist**

1 message

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— On Thu, 4/7/16, Moffatt, Bryan - NRCS, Fort Worth, TX <[Bryan.Moffatt@ftw.usda.gov](mailto:Bryan.Moffatt@ftw.usda.gov)> wrote:

> From: Moffatt, Bryan - NRCS, Fort Worth, TX <[Bryan.Moffatt@ftw.usda.gov](mailto:Bryan.Moffatt@ftw.usda.gov)>  
> Subject: RE: Some Maps to Look At  
> To: "EPICC TX" <[epicc183@yahoo.com](mailto:epicc183@yahoo.com)>  
> Date: Thursday, April 7, 2016, 10:55 AM  
> Leslie,  
>  
> I did not attach the maps on  
> purpose. I wanted a response to verify the e-mail address  
> was legitimate.  
>  
> Attached  
> are the maps. Take a close look at the geologic outcrop map.  
> Besides the Leona outcropping on the site so does the Midway  
> Group The Midway is described as: (see: <http://mrddata.usgs.gov/geology/state/sgmc-unit.php?unit=TXPNmi%3B0>  
> )  
>  
> There are lenses of  
> sand within this unit that have permeability. This means  
> leachate has pathways to enter the subsurface. Further,  
> there is faulting in the area. This means there is high  
> angle to vertical fracturing that further increases  
> permeability.  
>  
> Look at  
> photos P1192, P1197 and P1201. Note the orange color. This  
> is iron staining. It is deposited in permeable zones that  
> has intermittent water passing thru depositing iron that is  
> in solution. The deposited iron from the water passing thru  
> oxidizes i.e. the orange color. In 2014 I drilled 7 holes in  
> the Auxiliary Spillway to obtain samples for engineering  
> design work. This is where the photos can from. Additional  
> work is planned for this site. No date has been set as of  
> now.  
>  
> Please keep the  
> attached private. Do not post it. Thanks!  
>  
> Bryan  
>  
> —Original Message—  
> From: EPICC TX [<mailto:epicc183@yahoo.com>]  
> Sent: Thursday, April 07, 2016 10:02 AM  
> To: Moffatt, Bryan - NRCS, Fort Worth, TX  
> <[Bryan.Moffatt@ftw.usda.gov](mailto:Bryan.Moffatt@ftw.usda.gov)>  
> Subject: Re: Some Maps to Look At  
>  
> Understood. Thank you for  
> this information, Mr. Moffatt.  
>  
> You reference maps in the subject line... did  
> you intend to attach them?  
>  
> Thank you.  
> Leslie  
>  
> —  
> On Wed, 4/6/16, Moffatt, Bryan - NRCS, Fort  
> Worth, TX <[Bryan.Moffatt@ftw.usda.gov](mailto:Bryan.Moffatt@ftw.usda.gov)>  
> wrote:  
>  
> Subject: Some Maps  
> to Look At  
> To: "[epicc183@yahoo.com](mailto:epicc183@yahoo.com)"  
> <[epicc183@yahoo.com](mailto:epicc183@yahoo.com)>  
> Date: Wednesday, April 6, 2016, 4:27 PM  
>  
>

> You can tell  
 > from my  
 > e-mail address and salutation below  
 > why I don't want publicity. What I say is personal and  
 > in no way represents the NRCS.  
 >  
 > The Plum Creek 21 FCS is  
 >  
 > slated for upgrade because of hazard classification. The  
 > planned upgrade of the flood control structure (dam) has  
 > nothing to do with the proposed dump site  
 >  
 >  
 > Bryan S.  
 > Moffatt PG  
 > 2887 Geological Services Unit  
 > Senior State Geologist  
 >  
 > USDA – NRCS  
 > Fort Worth,  
 > Texas  
 > 817.233.6268  
 >  
 >  
 > This electronic message  
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 > civil  
 > or criminal penalties. If you  
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 > error, please notify the sender and delete  
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 > the email immediately.  
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 >

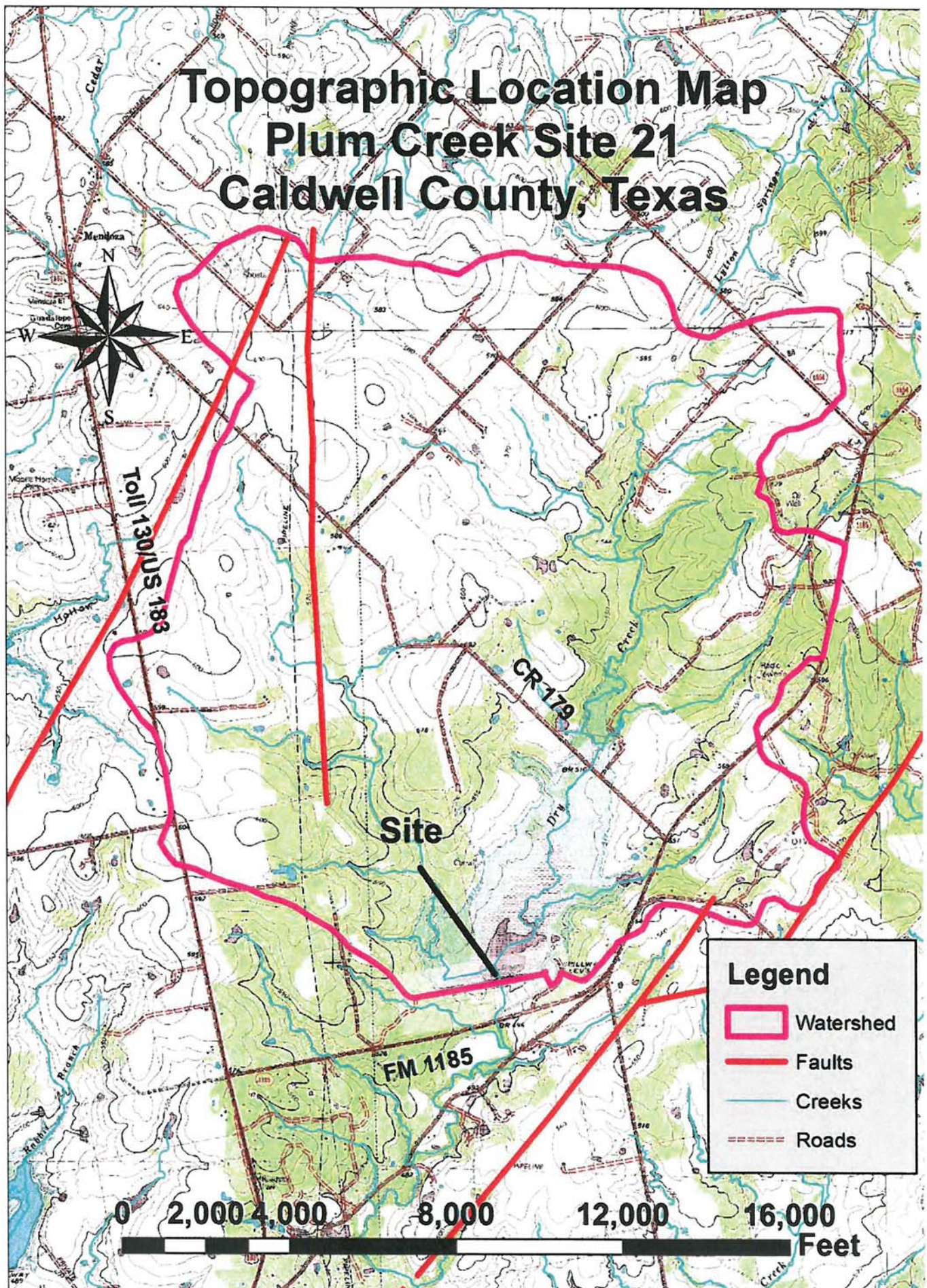
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**9 attachments**

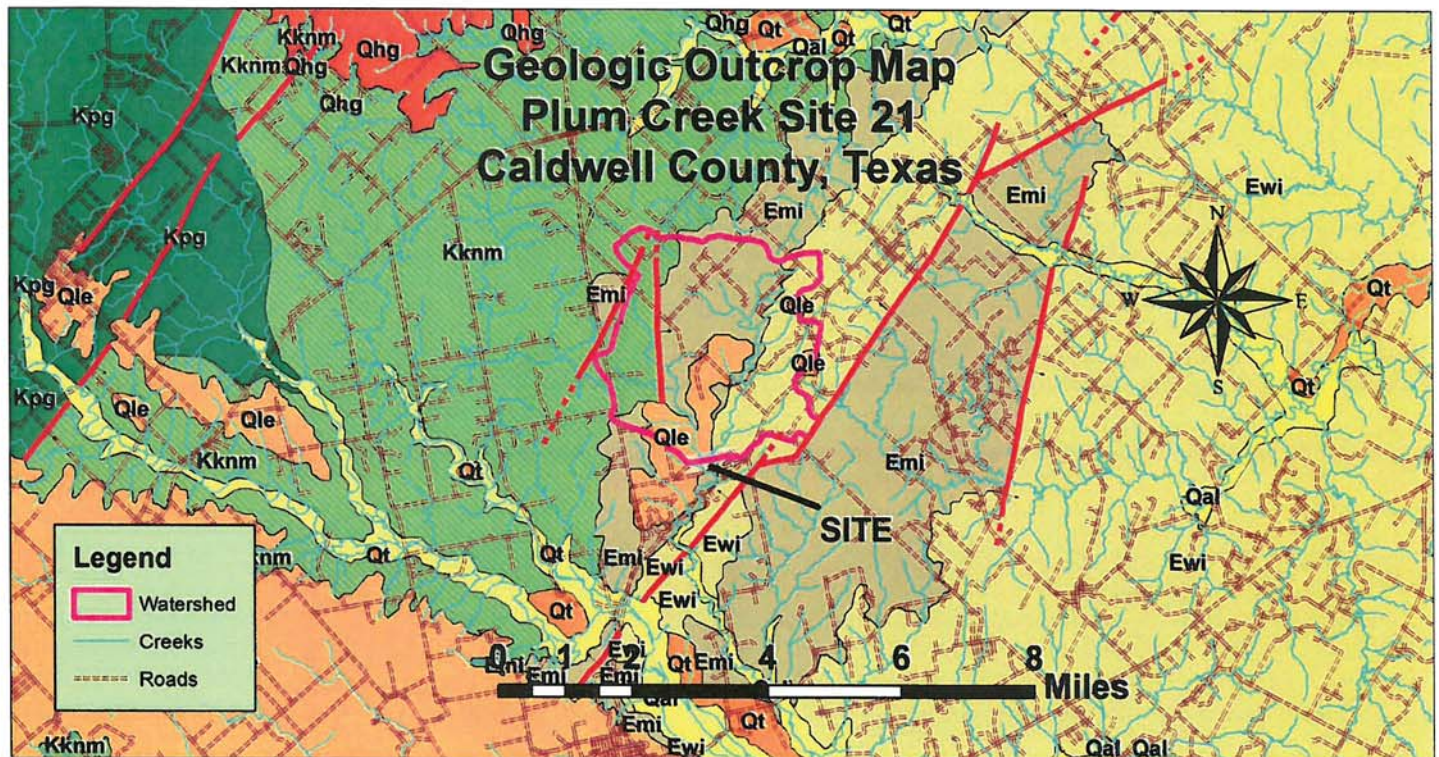
 Plum\_Creek\_21\_Topographic\_Location\_Map sm.pdf  
 350K  
 Geologic Outcrop Map.pdf  
 1488K  
 Plum\_Creek\_21\_Aerial\_Photo\_Location\_Map sm.pdf  
 478K  
 Plum Creek 21 Soils Map and Properties.pdf  
 1178K  
 Plum\_Creek\_21\_Georeferenced\_As-Built\_sm.pdf  
 305K  
 P1192 Plum Creek 21, Sample 251.5, 10' - 12.5' sm.pdf  
 757K  
 P1197 Plum Creek 21, Sample 251.7, 15' - 17.5' sm.pdf  
 779K  
 P1201 Plum Creek 21, Sample 251.9, 25' - 26.5' sm.pdf  
 738K  
 Plum Creek 21, Combined Seismic Data.pdf  
 1760K



# Topographic Location Map Plum Creek Site 21 Caldwell County, Texas







Modified from: Geologic Atlas of Texas, Seguin Sheet, Bureau of Economic Geology, 1974 <http://tnris.org/data-download/#/statewide>





# Aerial Photo Location Map Plum Creek Site 21 Caldwell County, Texas



## Legend

- Roads
- Watershed
- Creeks
- Faults

US 183/ Toll 130

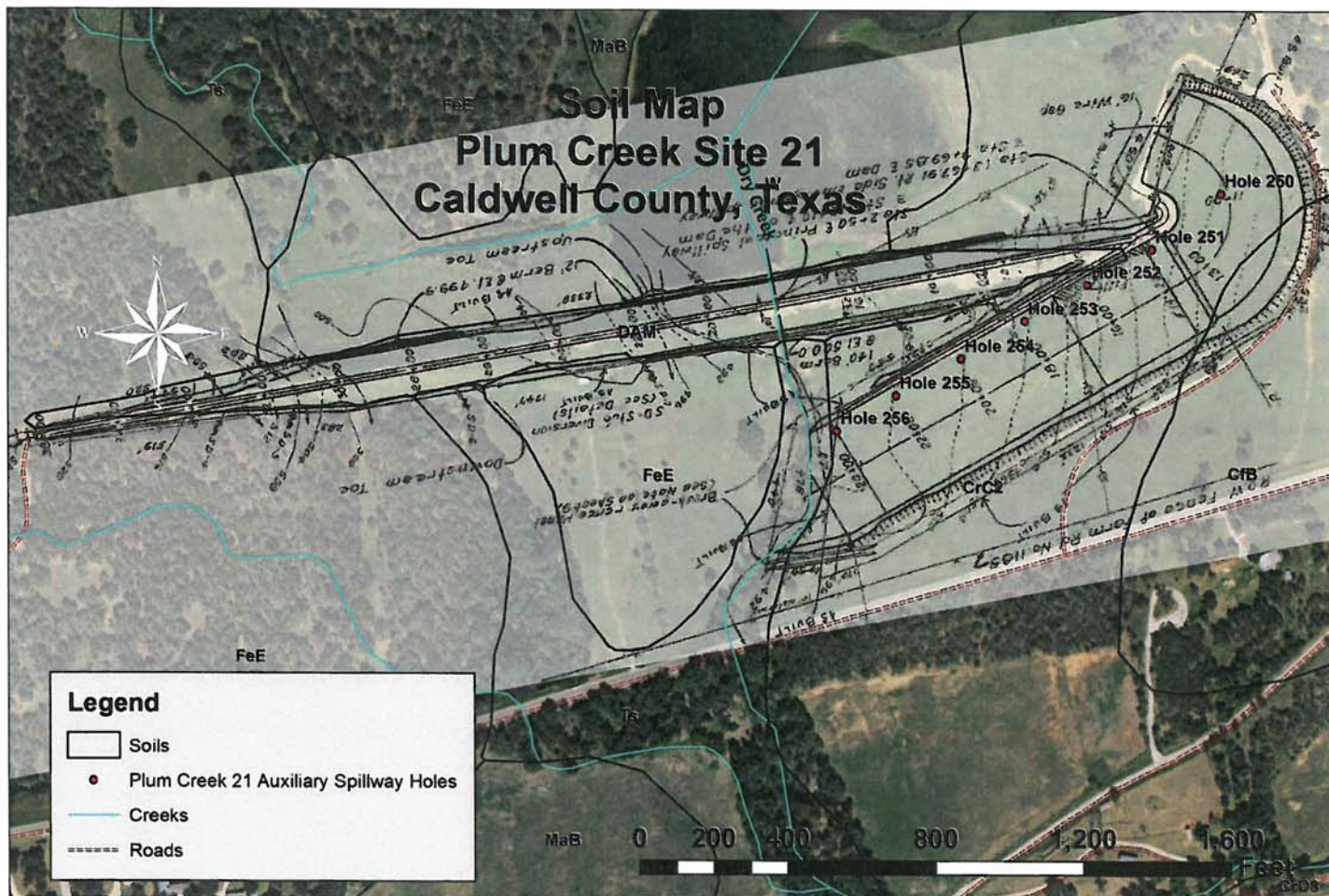
CR 179

Site

FM 1185

0 2,000 4,000 8,000 12,000 16,000 Feet





Base Map: USDA/NRCS 2014 NAIP from <http://datagateway.nrcs.usda.gov/>, Soils from USDA/NRCS SOIL Survey Geographic (SSURGO), Caldwell County, Texas, 2001, As-built from NRCS Texas State Office Files, 07/13/1962, Georeferenced with ArcGIS 10.2 09/03/2014, Creeks from National Hydrology Database, Roads from TNIRIS <http://tniris.org/data-download/#/statewide>, Texas Strategic Mapping Program (StratMap) 2006, Hole Location from field survey 09/11/2014

## Engineering Properties

Caldwell County, Texas

[Absence of an entry indicates that the data were not estimated. This report shows only the major soils in each map unit]

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--				Liquid limit  <i>Pct</i>	Plasticity index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200		
					<i>Pct</i>	<i>Pct</i>						
CcD3: Chaney, severely eroded	0-14	Fine sandy loam	CL-ML, ML, SM	A-4	0	0	95-100	90-100	80-95	45-65	16-30	NP-7
	14-31	Clay, sandy clay	CH, CL, SC	A-6, A-7-6	0	0	90-100	90-100	90-100	43-85	39-60	24-42
	31-52	Clay, sandy clay, sandy clay loam	CH, CL, SC	A-6, A-7-6	A-6,	0	0	90-100	90-100	80-100	45-85	25-55 11-40
	52-62	Channery clay, sandy clay, sandy clay loam	CH, CL, SC, SC-SM	A-2, A-4, A-6, A-7-6	0	0	90-100	90-100	80-100	25-85	25-60	6-40
CfB: Crockett	0-12	Fine sandy loam	CL, ML, SC, SM	A-4, A-6	0	0-2	98-100	94-100	89-100	40-96	15-35	3-15
	12-18	Clay, clay loam, sandy clay	CH, CL	A-6, A-7-6	0	0	89-100	75-100	75-100	60-98	35-59	23-42
	18-38	Clay, clay loam, sandy clay	CH, CL	A-6, A-7-6	0	0	89-100	75-100	75-100	65-98	35-59	23-42
	38-54	Clay, clay loam, sandy clay loam	CH, CL	A-6, A-7-6	A-6,	0	0-5	90-100	85-100	75-100	50-90	30-60 15-40
	54-62	Clay loam	CH, CL	A-7-6	0	0-5	90-100	90-100	90-100	70-99	45-71	27-52

Survey Area Version: 8  
Survey Area Version Date: 12/12/2013

Page 1

Protestants' Exhibit 4-A, p. 7

## Engineering Properties

Caldwell County, Texas

Map symbol and soil name	Depth <i>In</i>	USDA texture	Classification		Fragments		Percent passing sieve number--				Liquid limit <i>Pct</i>	Plasticity index
			Unified	AASHTO	>10 Inches <i>Pct</i>	3-10 Inches <i>Pct</i>	4	10	40	200		
CrC2: Crockett, eroded	0-7	Loam	CL, ML, SC, SM	A-4, A-6	0	0-2	98-100	94-100	89-100	40-96	15-35	3-15
	7-12	Clay, clay loam, sandy clay	CH, CL	A-6, A-7-6	0	0	89-100	75-100	75-100	60-98	35-59	23-42
	12-30	Clay, clay loam, sandy clay	CH, CL	A-6, A-7-6	0	0	89-100	75-100	75-100	65-98	35-59	23-42
	30-48	Clay, clay loam, sandy clay loam	CH, CL	A-7-6	A-6,	0	0-5	90-100	85-100	75-100	50-90	30-60 15-40
	48-62	Clay loam	CH, CL	A-7-6	0	0-5	90-100	90-100	90-100	70-99	45-71	27-52
FeE: Fett	0-14	Gravelly sandy loam	GM, GP, GP-GM, SP-SM	A-1-a, A-2-4	0-2	0-10	12-65	5-60	5-50	2-25	16-25	NP-7
	14-30	Gravelly clay, gravelly sandy clay, very gravelly clay	GC, SC	A-2-7	0-2	0-10	30-65	15-50	15-40	15-28	51-75	30-49
	30-80	Clay, gravelly clay, sandy clay	CH	A-7-6	0	0-5	80-100	70-100	70-100	70-99	51-84	35-61
MaB: Mabank	0-7	Loam	CL, CL-ML, SC,	A-4, A-6	0	0	95-100	95-100	80-98	40-70	19-32	4-15
	7-39	Clay, clay loam	CH, CL	A-6, A-7-6	0	0	95-100	95-100	95-100	60-85	38-55	22-37
	39-76	Clay, clay loam, sandy clay	CH, CL	A-6, A-7-6	0	0	95-100	95-100	95-100	60-85	38-55	22-37

Survey Area Version: 8  
Survey Area Version Date: 12/12/2013

Page 2

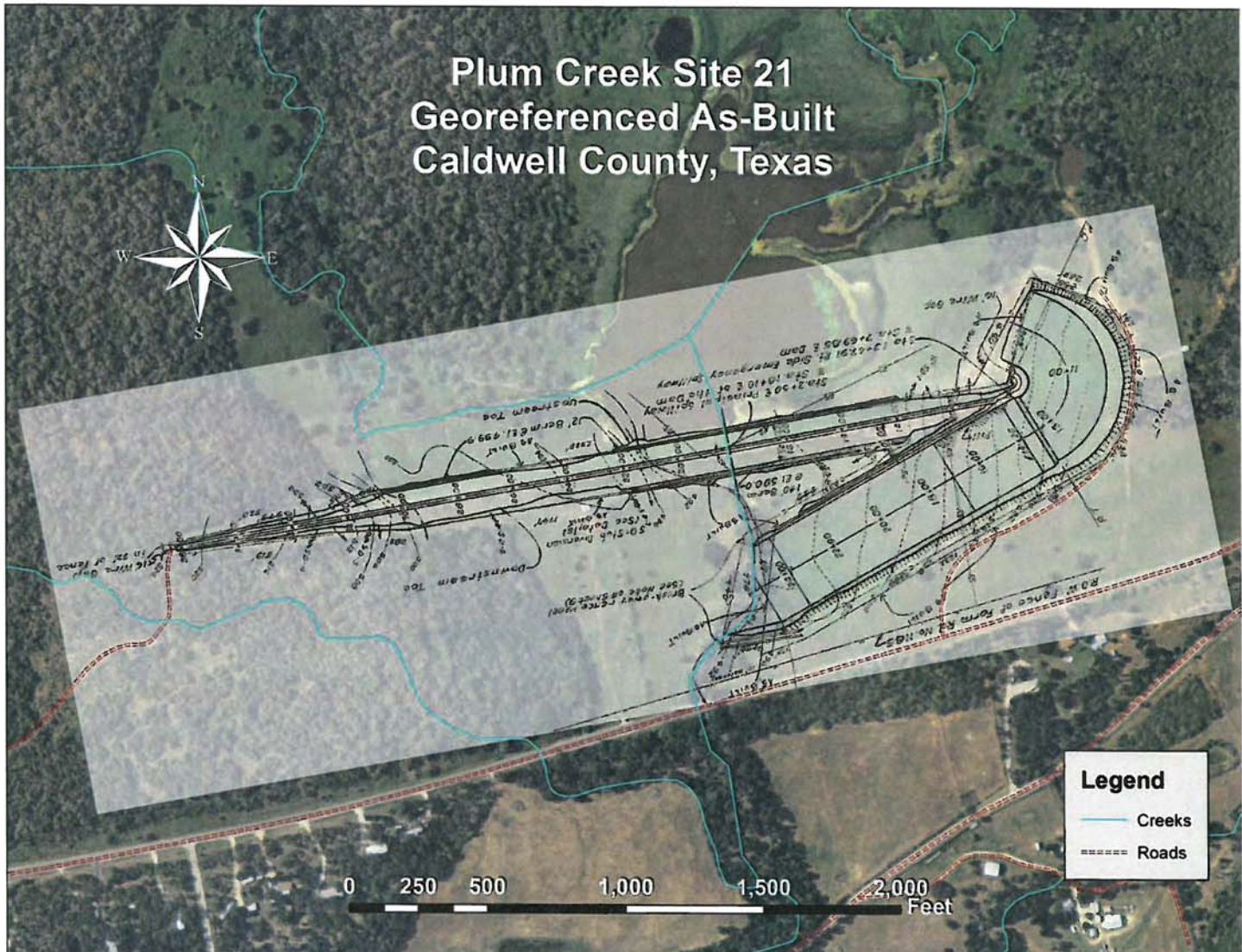
Protestants' Exhibit 4-A, p. 8



## Engineering Properties

Caldwell County, Texas

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--				Liquid limit  <i>Pct</i>	Plasticity  index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200		
					<i>Pct</i>	<i>Pct</i>						
Ts: Tinn	<i>In</i>											
	0-4	Clay	CH, CL	A-7-6	0	0	95-100	95-100	85-100	80-100	45-75	25-54
	4-62	Clay, silty clay	CH	A-7-6	0	0	95-100	90-100	80-100	80-100	55-75	35-54
	62-80	Clay, silty clay	CH	A-7-6	0	0	95-100	90-100	80-100	80-100	55-75	35-54





PUM CREEK 21  
CALDWELL COUNTY, TEXAS  
251.5  
10'-12.5'  
CROSS ANGLETON SEDIMENT





PLUM CREEK 21  
CRODWEK CO., TEXAS

ZS1, 7

15'-17.5'

CREST FARMILIAN SPRUWAY





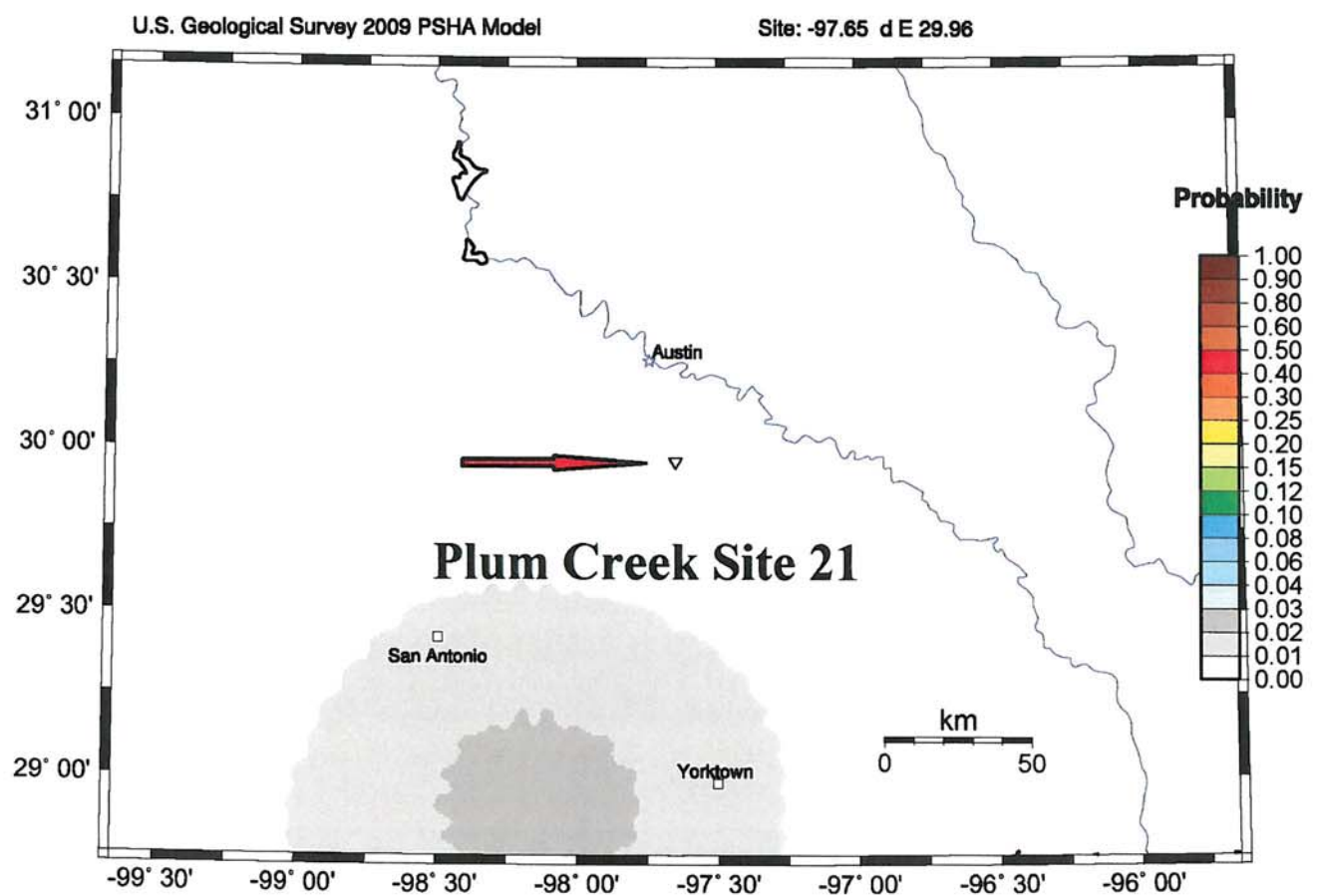
PLUM CREEK 21  
CALDWELL CO., TX  
251.9

25-26.5

CREST ANTHRACITE SEMI  
REFRAC c 26.5' IN  
SILICONE

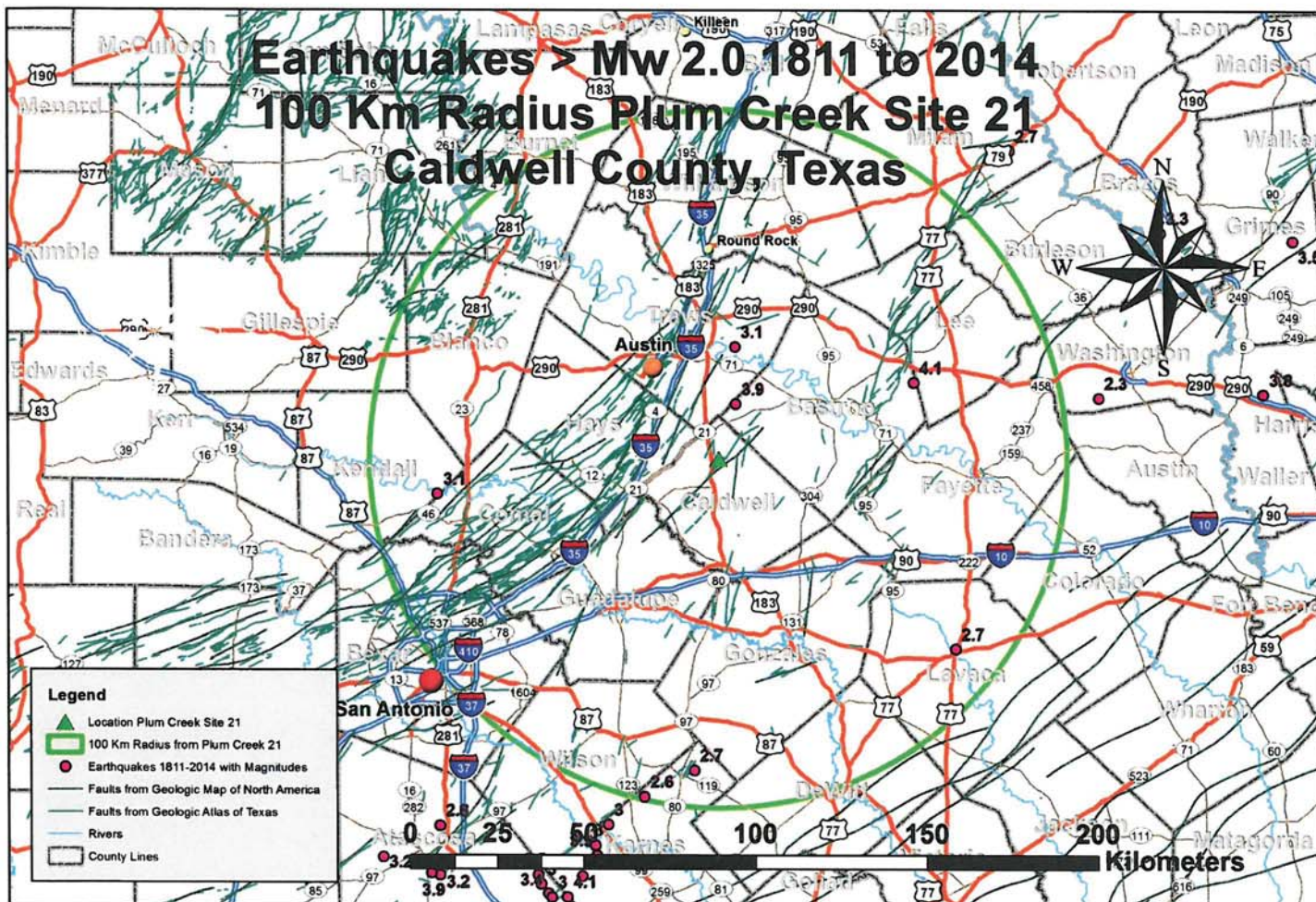


# Probability of earthquake with $M > 5.0$ within 100 years & 50 km



GMT 2015 Mar 24 20:55:59 Earthquake probabilities from USGS OPR 08-1128 PSHA. 50 km maximum horizontal distance. Site of Interest: triangle. Epicenters  $m_b > 5$  black circles; rivers blue.





Data from: Faults, Geologic Atlas Texas [http://www.tnris.org/get-data?quicktabs\\_maps\\_data=1](http://www.tnris.org/get-data?quicktabs_maps_data=1) Bureau of Economic Geology, University of Texas Austin and USGS, 2007.  
 Additional Fault data from Geologic Map of North America, USGS, 2005, <http://ngmdb.usgs.gov/gmna/>, Earthquake and Magnitude from 2002 Deaggregations txt data <https://geohazards.usgs.gov/deaggint/2002>, USGS, and [http://www.ndbc.noaa.gov/hazard/int\\_srch.shtml](http://www.ndbc.noaa.gov/hazard/int_srch.shtml), NOAA, Data plotted in ArcMap 10.2.

# PSH Deaggregation on NEHRP BC rock

Plum Creek 21 97.654° W, 29.958 N.

Peak Horiz. Ground Accel.  $\geq 0.07774$  g

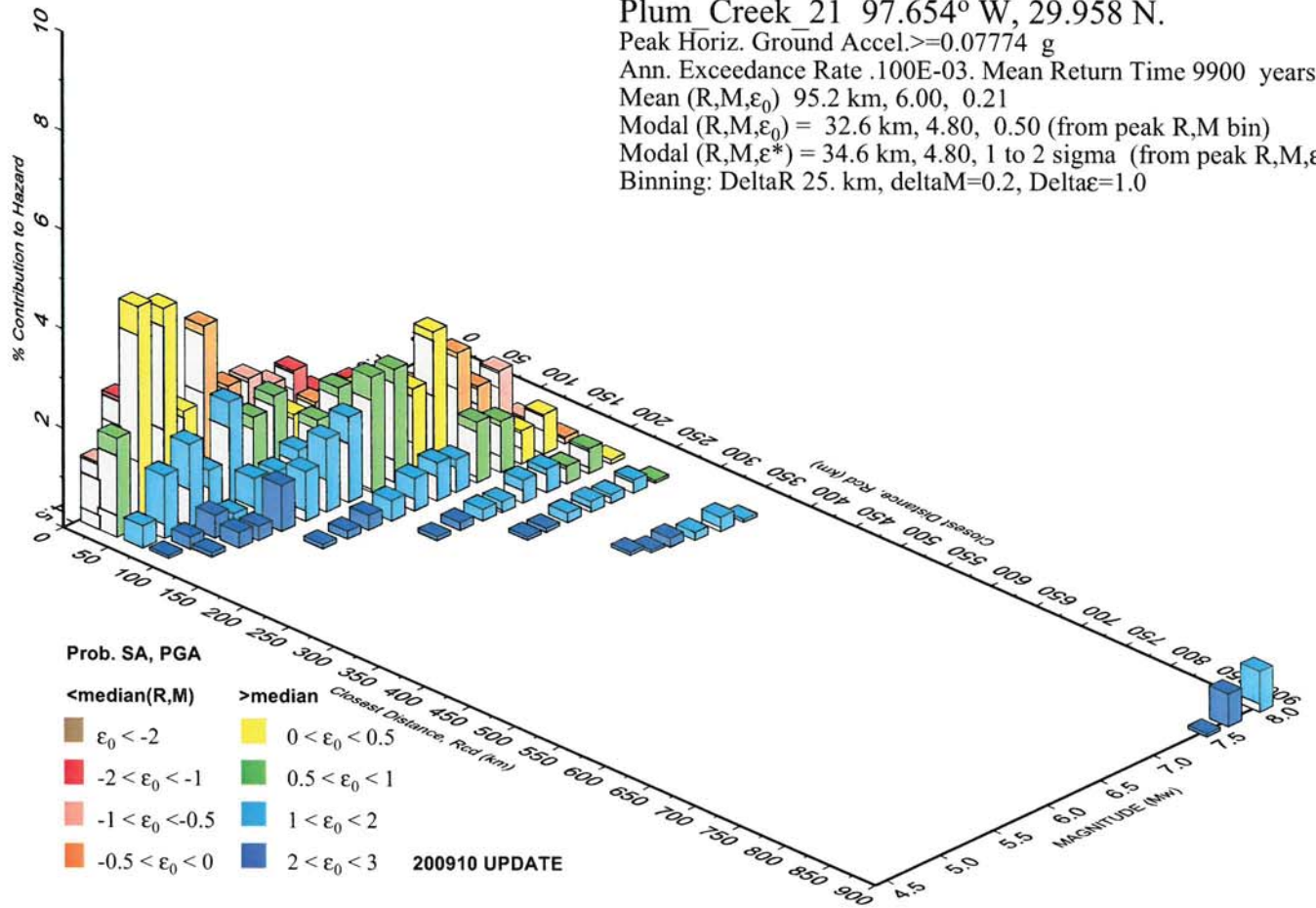
Ann. Exceedance Rate .100E-03. Mean Return Time 9900 years

Mean (R,M, $\epsilon_0$ ) 95.2 km, 6.00, 0.21

Modal (R,M, $\epsilon_0$ ) = 32.6 km, 4.80, 0.50 (from peak R,M bin)

Modal (R,M, $\epsilon^*$ ) = 34.6 km, 4.80, 1 to 2 sigma (from peak R,M, $\epsilon$  bin)

Binning: DeltaR 25. km, deltaM=0.2, Delta $\epsilon$ =1.0



GMT 2015 Mar 24 20:58:14

Distance (R), magnitude (M), epsilon (E0,E) deaggregation for a site on rock with average vs= 760. m/s top 30 m. USGS CGHT PSHA2008 UPDATE Bins with lt 0.05% contrib. omitted



Figure 1 is a log-log plot showing the relationship between Magnitude ( $M_w$ ) and Distance (Km). The y-axis ( $M_w$ ) ranges from 4.00 to 10.00, and the x-axis (Distance Km) ranges from 1 to 1000. A solid black line represents the  $e-e'$  relationship. Data points are categorized by their contribution to the 9,900-year event: blue squares for >3% Contribution, yellow circles for <1% Contribution, and grey triangles for 1% - 3% Contribution. A red diamond at approximately (20, 4.8) represents the Plum Creek Site 21 Deaggregation Mean Modal.

Protestants' Exhibit 4-A, p. 17

Number	Distance	Mag	%		X	Y	>3% Dist	> 3% Mw	>3% Contribution	1%-3% Distance	1%-3% Mw	1%-3%- Contribution	<1% Distance	<1% Mw	<1% Contribution	Mean Modal	
1	32.6	4.8	4.454		1.55	4.6233	32.6	4.8	4.454	123.3	6.78	2.67	89.9	5.81	0.995	95.2	6
2	33.5	5.03	4.199		2	4.7445	33.5	5.03	4.199	13.9	4.8	2.456	87.2	7.01	0.989	32.6	4.8
3	34.6	5.4	3.482		3	4.8605	34.6	5.4	3.482	122.1	6.22	2.315	61.9	5.21	0.972	34.6	4.8
4	123.3	6.78	2.67		4	4.9839				122.7	6.42	2.272	36.9	6.78	0.972		
5	13.9	4.8	2.456		5	5.1168				62.3	5.4	2.158	118.8	5.41	0.93		
6	122.1	6.22	2.315		7	5.2427				35.2	5.61	2.052	89.5	5.4	0.842		
7	122.7	6.42	2.272		10	5.4423				124.1	7	2.032	897.6	8	0.822		
8	62.3	5.4	2.158		20	5.806				35.6	5.8	2.015	173.4	7.39	0.801		
9	35.2	5.61	2.052		30	5.9708				32	4.61	1.991	89.7	5.62	0.77		
10	124.1	7	2.032		40	6.1416				34	5.21	1.942	170	6.42	0.766		
11	35.6	5.8	2.015		50	6.3238				63.1	5.81	1.885	36.8	6.59	0.726		
12	32	4.61	1.991		70	6.5045				85.8	6.22	1.813	14.3	5.21	0.683		
13	34	5.21	1.942		100	6.8024				14.1	5.03	1.779	60.8	6.59	0.677		
14	63.1	5.81	1.885		130	6.9704				36.7	6.21	1.771	172.7	7.19	0.668		
15	85.8	6.22	1.813		160	7.1472				121.3	6.01	1.713	170.1	6.6	0.664		
16	14.1	5.03	1.779		200	7.3954				123	6.59	1.711	897.6	7.7	0.659		
17	36.7	6.21	1.771		300	7.6796				36.8	6.01	1.697	169.2	6.22	0.653		
18	121.3	6.01	1.713		337.5	7.8				61.4	5.04	1.672	63.2	6.98	0.627		
19	123	6.59	1.711		400	8.041				62.8	5.62	1.641	86.2	7.18	0.603		
20	36.8	6.01	1.697		437.1	8.2				85.9	6.42	1.583	37.4	6.99	0.535		
21	61.4	5.04	1.672		458	8.3				120.6	5.81	1.47	14.5	5.61	0.514		
22	62.8	5.62	1.641		500	8.5134				88.3	6.79	1.383	223.1	7.39	0.503		
23	85.9	6.42	1.583		642.5	9				86.1	6.02	1.363	222.1	7.01	0.482		
24	120.6	5.81	1.47							13.7	4.6	1.343	90.4	7.39	0.47		
25	88.3	6.79	1.383							60.8	6.21	1.319	221.8	6.79	0.464		
26	86.1	6.02	1.363				Points above and left of e-e' curve			61.6	6	1.302	89.1	5.04	0.458		
27	13.7	4.6	1.343							124.1	7.39	1.275	66	7.39	0.457		
28	60.8	6.21	1.319							60.7	4.81	1.269	14.6	5.8	0.455		
29	61.6	6	1.302							64.1	6.77	1.25	60.2	4.61	0.449		
30	124.1	7.39	1.275							170.5	6.79	1.222	168.5	6.01	0.408		
31	60.7	4.81	1.269							124.3	7.19	1.17	222.8	7.19	0.353		
32	64.1	6.77	1.25							37.2	6.42	1.167	13.8	6.01	0.35		
33	170.5	6.79	1.222							85.5	6.59	1.109	12.9	6.21	0.332		
34	124.3	7.19	1.17							60.8	6.42	1.061	89.3	5.21	0.321		
35	37.2	6.42	1.167							14.4	5.39	1.041	115	5.05	0.316		
36	85.5	6.59	1.109							171.6	7	1.03	167	5.82	0.295		
37	60.8	6.42	1.061							119.9	5.62	1.005	369	7.4	0.29		
38	14.4	5.39	1.041										117.1	5.21	0.288		
39	171.6	7	1.03										37.3	7.18	0.272		
40	119.9	5.62	1.005										272.1	7.39	0.265		
41	89.9	5.81	0.995										60.9	7.18	0.264		
42	87.2	7.01	0.989										36.3	7.39	0.255		
43	61.9	5.21	0.972										13.9	6.42	0.254		
44	36.9	6.78	0.972										88.5	4.81	0.248		
45	118.8	5.41	0.93										220.3	6.43	0.233		
46	89.5	5.4	0.842										221.4	6.6	0.223		
47	897.6	8	0.822										271.3	7.01	0.22		
48	173.4	7.39	0.801										270.9	6.79	0.196		
49	89.7	5.62	0.77										13.5	6.78	0.189		
50	170	6.42	0.766										359	7.01	0.177		
51	36.8	6.59	0.726										271.6	7.19	0.174		
52	14.3	5.21	0.683										365	7.19	0.164		
53	60.8	6.59	0.677										219.3	6.22	0.161		



54	172.7	7.19	0.668
55	170.1	6.6	0.664
56	897.6	7.7	0.659
57	169.2	6.22	0.653
58	63.2	6.98	0.627
59	86.2	7.18	0.603
60	37.4	6.99	0.535
61	14.5	5.61	0.514
62	223.1	7.39	0.503
63	222.1	7.01	0.482
64	90.4	7.39	0.47
65	221.8	6.79	0.464
66	89.1	5.04	0.458
67	66	7.39	0.457
68	14.6	5.8	0.455
69	60.2	4.61	0.449
70	168.5	6.01	0.408
71	222.8	7.19	0.353
72	13.8	6.01	0.35
73	12.9	6.21	0.332
74	89.3	5.21	0.321
75	115	5.05	0.316
76	167	5.82	0.295
77	369	7.4	0.29
78	117.1	5.21	0.288
79	37.3	7.18	0.272
80	272.1	7.39	0.265
81	60.9	7.18	0.264
82	36.3	7.39	0.255
83	13.9	6.42	0.254
84	88.5	4.81	0.248
85	220.3	6.43	0.233
86	221.4	6.6	0.223
87	271.3	7.01	0.22
88	270.9	6.79	0.196
89	13.5	6.78	0.189
90	359	7.01	0.177
91	271.6	7.19	0.174
92	365	7.19	0.164
93	219.3	6.22	0.161
94	126.4	7.59	0.16
95	165.7	5.63	0.159
96	13.9	6.59	0.153
97	172.9	7.59	0.131
98	15.4	6.99	0.103
99	110.5	4.83	0.092
100	163.4	5.42	0.091
101	223.7	7.59	0.085
102	270.6	6.6	0.082
103	218.5	6.02	0.078
104	269.7	6.43	0.073
105	346.4	6.74	0.067
106	371.5	7.6	0.066
107	897.5	7.5	0.064
108	87.6	4.62	0.06
109	355.4	6.86	0.058
110	272.6	7.59	0.055

126.4	7.59	0.16
165.7	5.63	0.159
13.9	6.59	0.153
172.9	7.59	0.131
15.4	6.99	0.103
110.5	4.83	0.092
163.4	5.42	0.091
223.7	7.59	0.085
270.6	6.6	0.082
218.5	6.02	0.078
269.7	6.43	0.073
346.4	6.74	0.067
371.5	7.6	0.066
897.5	7.5	0.064
87.6	4.62	0.06
355.4	6.86	0.058
272.6	7.59	0.055