

December 16, 2010

Susan Pelz, P.E. Southwest District Florida Dept. of Environmental Protection 13051 North Telecom Pkwy. Temple Terrace, FL 33637 DEC 1 > 2010
Southwest District

RE: Citrus County Central Landfill

Landfill Gas Remediation System As-Built Drawings

Jones Edmunds Project No.: 03860-038-01

Dear Ms. Pelz:

Jones Edmunds, on behalf of Citrus County, installed a solar powered soil vapor extraction system to remediate groundwater contamination near MW-10 at the Citrus Central Landfill. The system has been operating since October 2010. The well locations were surveyed by the County. A site map showing the location of the system is included as Figure 1.

The system consists of five soil vapor extraction wells installed between MW-10 and the closed landfill. The wells are spaced approximately 50 feet apart. Three wells were installed to 100 feet total depth and two wells were installed to 60 feet total depth. The wells are constructed of 4-inch-diameter PVC and 0.020-inch slotted PVC screen. Boring logs and well construction details are included in Attachment 1 and Figure 2.

The extraction wells are connected to a solar powered electric blower by a 2-inch diameter PVC suction line. Each well has a valve to modify flow from the well, a sample port to measure landfill gas concentration, and a condensate collection trap. The extraction system construction details are included in Figure 3. The system's electrical plan is shown in Figure 4.

Carbon Dioxide, Methane, and Oxygen measurements will be collected from each extraction well on a bi-monthly basis for one year. Table 1 presents gas measurements that have been collected since operation of the system began. Landfill gas has been detected in four of the five extraction wells. A minor amount of condensate has been observed in the condensate traps of GEW-3 and GEW-4. If enough condensate accumulates, a condensate sample will be collected for laboratory analysis. The condensate traps will be checked bi-monthly and accumulated condensate not collected for analysis will be disposed of at the landfill leachate collection system.

730 NE Waldo Rd Gainesville, FL 32641

		Tab	ole 1 – Gas	Readings	from Extra	action Wel	ls			
Extraction	Oc	tober 1, 20)10	Oct	October 15, 2010			November 18, 2010		
Well	O_2	$\mathrm{CH_{4}}$	CO ₂	O ₂	CH ₄	CO ₂	O_2	CH ₄	CO ₂	
1	(%Vol.)	(%LEL)	(%Vol.)	(%Vol.)	(%LEL)	(%Vol.)	(%Vol.)	(%LEL)	(%Vol.)	
GEW-1	20.9%	0%	0%	20.9%	0%	0.4%	18.5%	3%	1.8%	
GEW-2	18.8%	0%	1.8%	15.8%	0%	4.8%	17.5%	0%	3.4%	
GEW-3	20.3%	1%	0.6%	17.2%	3%	3.6%	15.4%	5%	5.4%	
GEW-4	20.7%	0%	0.2%	20.9%	0%	0%	15.0%	0%	4.4%	
GEW-5	20.3%	0%	0%	20.9%	0%	0%	20.9%	0%	0%	

Table 1 C	ontinued-	Gas Read	ings from				
Extraction Wells							
Extraction	Dec	ember 10,	2010				
Well	O_2	$\mathrm{CH_4}$	CO_2				
	(%Vol.)	(%LEL)	(%Vol.)				
GEW-1	20.2%	0%	0.2%				
GEW-2	17.5%	0%	2.8%				
GEW-3	12.1%	7%	8.2%				
GEW-4	10.0%	1%	8.6%				
GEW-5	20.8%	0%	0%				

The system will be adjusted to maximize gas extraction based on the gas measurements by opening and closing the valves to the extraction wells. After one year of bi-monthly monitoring, we will submit a report detailing the groundwater sampling results and the gas measurements collected from the extraction system. The report will be submitted to FDEP by October 31, 2011.

If you have any questions concerning these documents, please call me at (352) 377-5821 ext. 5375.

Sincerely,

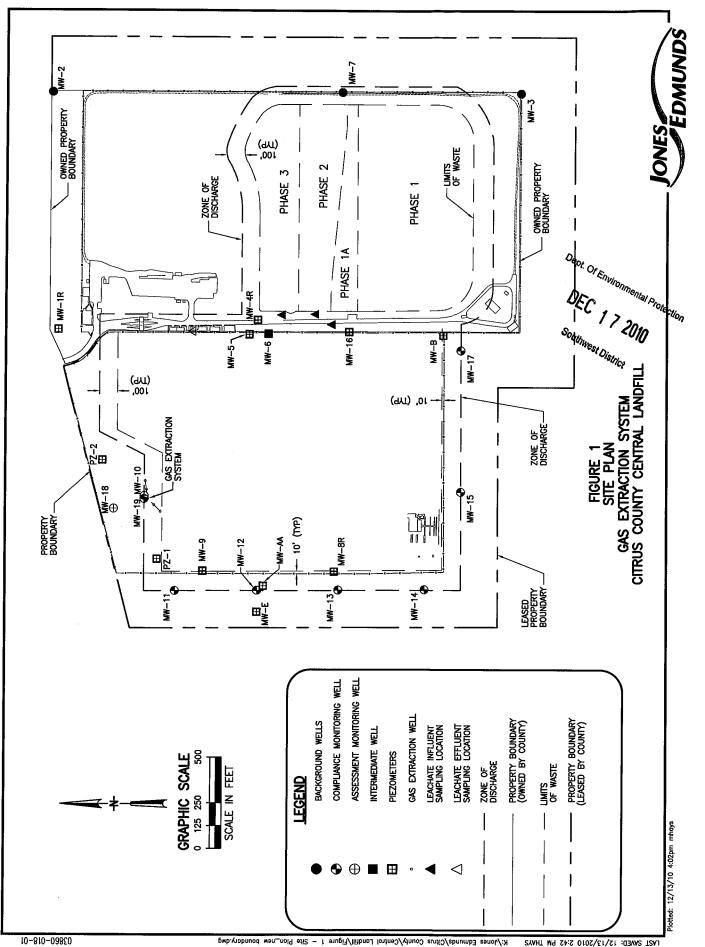
Troy Hays

Project Manager

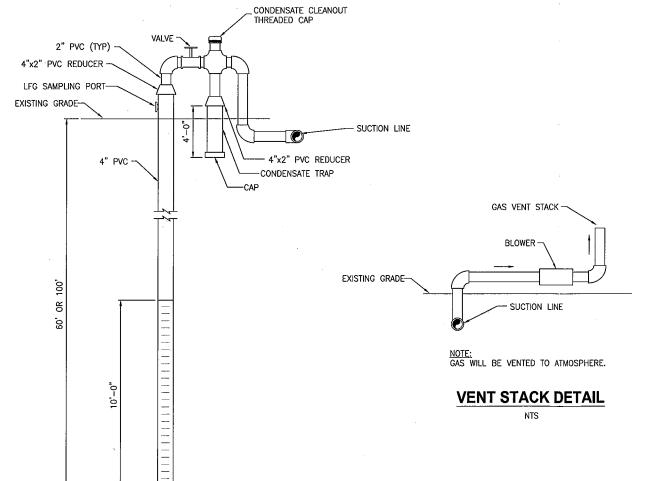
Enclosures

xc: John Morris, FDEP

Casey Stephens, Citrus County







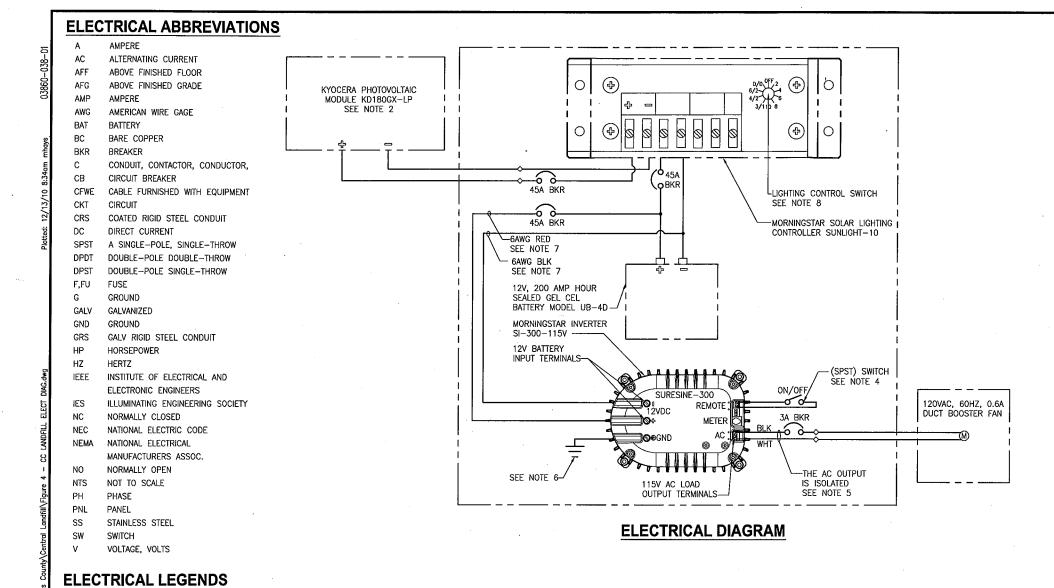
DEEP SOIL VAPOR EXTRACTION SYSTEM DETAIL

NTS

K:\Jones Edmunds\Citrus County\Central Landfill\Figure 3 — Extraction Well

310 3:29 PM MHAYS





MW-18 DUCT BOOSTER CONTROL PANEL SEE NOTE 2 -SOLAR PANEL -MW-19 - O- -O -CONCRETE PAD PZ-1 MW-1 GAS EXTRACTION WELLS (TYP)

CITRUS COUNTY CENTRAL LANDFILL ELECTRICAL PLAN

FIGURE 4 GAS EXTRACTION SYSTEM



SYMBOL

ON/OFF

60

MOTOR, HORSEPOWER INDICATED GROUND ROD, 5/8"x10'-0" COPPER CLAD

CONDUIT, EXPOSED

ON-OFF SWITCH

CIRCUIT BREAKER

THE LEGEND AND NOT ON THE DRAWINGS.

CONDUIT UP (MULTIPLE OR SINGLE) CONDUIT DOWN (MULTIPLE OR SINGLE)

CONDUIT IN FLOOR OR UNDERGROUND

___ MULTIPLE CONDUIT RUN (UNDERGROUND

UNLESS OTHERWISE INDICATED)

TERMINAL BLOCK (12VDC)

SOME SYMBOLS AND ABBREVIATIONS MAY APPEAR ON

NOTES

1. PROVIDE OND SPARE CIRCUIT BREAKER FOR EACH TYPE USED.

2. MOUNT ALL ELECTRICAL DEVICES IN A NEMA 4X 316 STAINLESS STEEL ENCLOSURE WITH PADLOCKING HASP. ENCLOSURE SHALL BE MINIMUM 36"X30"X20" MODEL SPN4SS6-363020 BY SHAFFER'S.

3. ALL COMPONENTS SHALL BE SIZED PER NATIONAL ELECTRICAL CODE.

4. USE 16 AWG WIRE TO CONNECT REMOTE TERMINALS OF THE SPST ON/OFF SWITCH.

5. AC LINE AND NEUTRAL ARE INTERCHANGEABLE. USE UL LISTED 12AWG BLACK WIRE FOR AC LINE AND UL LISTED 12AWG WHITE WIRE FOR AC NEUTRAL. THE EARTH GROUND LEG DEFINES AC NEUTRAL.

6. USE UL 4AWG OR LARGER GREEN WIRE FOR GROUND.

7. USE UL LISTED 6AWG OR LARGER BLACK WIRE TO CONNECT 12V BATTERY NEGATIVE TO NEGATIVE DC INPUT TERMINAL. USE UL LISTED 6AWG OR LARGER RED WIRE TO CONNECT THE 12V BATTERY POSITIVE TO THE DC INPUT POSITIVE TERMINAL ON THE SURESINE

8. TURN LIGHTING CONTROL SWITCH TO THE LIGHTING OPTION DESIRED. REFER TO SUNLIGHT SOLAR LIGHTING CONTROLLER OPERATOR'S MANUAL FOR AVAILABLE LIGHTING CONTROL

> ELECTRICAL PLAN CITRUS COUNTY CENTRAL LANDFILL

ATTACHMENT 1 BORING LOGS

Project Name: Citrus County Central Remediation

Project Number: 03860-038-01

Drilling Contractor: Huss

Drilling/Sampling Methods: Hollow-stem auger

Boring Number: GEW-1

Page 1 of 3

Test Boring Completed: 3/9/2010, Well Completed: 3/10/2010

Jones Edmunds Field Geologist: M. Hays

Elevations: Ground: 113.540 ft NGVD 29 (Surveyed by Citrus County)

epth	SPT Data ASTM D158				Well D
٦	per 6"	N	Description of Soil		
ļ			SAND, brown, fine-grained, SP		
-			OLAVEY OAND		
			CLAYEY SAND, orange-brown, SC		
			CLAYEY SAND, red-brown/yellow-brown, SC		
-				5_	
			CLAYEY SAND, light yellow-brown, SC	***************************************	
ļ					
ŀ			SAND with clay, light yellow, fine-grained, SP-SC		
ŀ	2222				
۱-۲				10_	
			SAND with clay, yellow-brown, SP-SC		
١				***************************************	
ļ			SAND, light yellow, fine-grained, damp, SP	•	
.					
; 				15_	
ļ			SAND, very light yellow/white, very fine-grained, SP	····	
ļ					
ļ	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
ļ					
4				20_	
ļ			SAND, white, very fine-grained, damp, SP	MANAGEMENT SHAMEOFASHAN CONTROL OF SHAME S	
ļ					
ļ	200000				
ŀ				NEXT PROPERTY OF THE PROPERTY AND THE PROPERTY OF THE PROPERTY	
5_				25_	
ŀ			SAND, white/very light yellow, very fine-grained, damp, SP	······································	
ŀ				MAI COMO COMO TO INSTITUTO DE COMO COMO CAMO VINENTAMO DE	
ļ					
٦4				30_	
ļ			SAND, light yellow-brown, fing-grained, damp, SP		
ļ				***************************************	
ļ				ana yan ilin ayan bila aasan da sanan baasan ba	
				er gerinde de gegen er gegen gerinde oppræde de d	
5 4				35_	
1			SAND, light yellow-brown, fine-grained, damp, SP	ncherone shannoon: avere expressionates of Ermannoon Space	
ļ				**************************************	
1				40_	
			SAND, very light yellow, fine-grained, damp, SP		
2				42	

Notes and Additional Data/Info. (Specify if Other Materials Used):
Total Well Depth = 100 ft bls

Well Casing/Pipe: Diam. and Type = 2-in Sch. 40 PVC; Solid Length = 90 ft bls; Screen = 10 ft, 0.020-in Gravel Filter Pack = $\underline{6}$ 50-lb Bags; Type = $\underline{Pea\ Gravel}$; Placed from $\underline{100}$ to $\underline{88}$ ft bls (measured) Annular Seal: Type = Fine Sand/Bentonite; Thickness = $\underline{1/3}$ ft; Placed from $\underline{88}$ to $\underline{84}$ ft bls (measured) Grout = $\underline{20}$ 94-lb Bags of Cement Grout to Surface;



TEST BORING FIELD REPORT Boring Number: GEW-1						
Project Name: Project Number:	Citrus County Central Remediation 03860-038-01	on .				
SPT Data	03000-030-01		Well			
pth ASTM D1586 2 per 6" N		Description of Soil	· · · · · · · · · · · · · · · · · · ·			
2000000						
5	SAND white to light vollaw	-brown to white, fine-grained, damp, SP	45_			
January .	SAND, Write to light yellow	-brown to writte, line-granieu, damp, or				
2						
<u> </u>						
0	CAND with all annual base	- fil CD CM	50			
2000	SAND with silt, orange-bro	wn, fine-grained, SP-SM				
	SAND, white/very light yello	ow, fine-grained, damp, SP				
5	OAND	its for an in all OD	55			
10000	SAND, orange-brown to wh	nite, line-grained, SP				
	Taracing and a company of the compan		K ONLAFILA JAROMAN EKRES SARIBANDAMAN DAMAK ETALIFORI JA TIA ASI ASI PETETIAR PARKET.			
	CONTRACTOR OF THE PROPERTY OF					
00			60			
	CLAYEY SAND, red-brown	, damp, SC				
2000	SAND, light yellow, damp,	SP				
5			65			
2000	SAND with clay, orange-bro	own, SP-SC				
22.2.2	SAND, light yellow, fine-gra	ained SP	**************************************			
100000000000000000000000000000000000000	OAND, light yellow, line-git	arrow, or				
0			70			
	SAND with clay, yellow-bro	wn & orange-brown, damp, SP-SC				
2000						
ar a	**************************************		***************************************			
5	Description of the second seco		75_			
222222	SAND with clay, orange-bro	own, SP-SC	23-264-468-481-881-00327-0481-881-881-881-881-881-881-881-881-881-			
			TO CHARLES A CONTINUE TO THE THE THE THE THE STATE OF THE SALE AND A CONTINUE SALE.			
1,1,1,1						
0			80_			
	SAND with clay, orange-bro	own, SP-SC				
			AND STATE COMMUNICATION STATE STATE OF SECOND STATE ST			
1	***************************************					
5			85			
* 	SAND, light yellow, fine-gra	ained, minor clay, SP				
37			87			
otes and Additio	nal Data/Info. (Specify if Other Mater	rials Used):	NIEC			
)	DNES EDMUN			
		ENGI	NEERS ARCHITECTS SCIE			

TE	ST BO	RIN			_D REPORT Boring Number: GEW-1	Page 3	of 3
	oject Nar				County Central Remediation		
Pro	oject Nun	ata	П	03860	-038-01		Well Details
Depth 87	AŞTM D per 6"	1586 N			Description of Soil		
٠	10,0		H		2 documentar or con		
		1					
90_						90	
]			SAND, light yellow, fine-grained, SP		
		1				***************************************	
						MATERIAL POPULAR SPECIAL SPECI	
٥-		1					
95_		1			SAND, light yellow, fine-grained, SP	95_	
		1			OAND, light yellow, fille-grained, of	***************************************	
		1				angerçanque un normalismostrarentistic	
		1					
100]				100	
				•			
		1			Boring over-drilled to ~ 104 feet to allow for cave-in, well set at 100 feet	***************************************	
						Market Caracian Drawn Specific Constitution of the Caracian Specific C	
405		1 1				100	-
105_		1 1				105_	
	2000	1 1				WHEN PARTY TAXABLE PARTY CONTENT THE PROPERTY OF	
		1					
		1				MODERNICOMO PRO APPRILATOR DE PROPERTO DE LA PORTADA DE LA	
110]				110]
]				***************************************	
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					add sedder brawn birbowdor i drii bhon spilinnin namad riinni	
		1					
445		1				115	
115_		1 1				110	1
		1 1				***************************************	
		1 1				***************************************	
		1 1					
120]				120]
						AL 1871 PROFESSION OF SELECTION AND SERVICES (SERVICES	
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					puling system grant of another in the second plane in the	
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					.	
105						125	
125						IZU	1
	or and a second	1					1
		1				**************************************	
]					
130						130	1
						CALL PROTESSES CONTROL TRANSPORMENT	
132			Ц			132	<u> </u>
Note	es and Ad	dditio	nal	l Data/	Info. (Specify if Other Materials Used): JONE	SEDMU ARCHITECTS	UNDS

Project Name: Citrus County Central Remediation

Project Number: 03860-038-01 Drilling Contractor: Huss

Drilling/Sampling Methods: Hollow-stem auger

Boring Number: GEW-2

Page 1 of 2

Test Boring Completed: 3/9/2010, Well Completed: 3/9/2010

Jones Edmunds Field Geologist: M. Hays

Elevations: Ground: 112.25 ft NGVD 29 (Surveyed by Citrus County)

			120.05
	SPT Data		Well D
epth	1 .	Description of Call	
٥_	per 6" N	Description of Soil	
		SANDY CLAY, yellow & red-brown, CL	
		CLAYEY SAND, yellow-brown, SC	
	2000		
_	2000		
5_			5
		SAND with clay, light yellow, fine-grained, damp, SP-SC	
		SAND, very light yellow, fine-grained, SP	
	2000	The state of the s	
0			10
		SAND, very light yellow/white, fine-grained, SP	
		1	
	22		
5_			15
		SAND, very light yellow/white, fine-grained, minor clay, SP	
1			
- 1			
:o_		1 8888	20
		SAND, very light yellow to light yellow, fine-grained, SP	
ı			
ı			
- 1	22.00		
25]			25
		SAND, very light yellow, fine-grained, damp, SP	
1		1 1 1 1	
ı			
ŀ			
ı			
ю_]			30
		SAND with clay, yellow, fine-grained, damp, SP-SC	
ı			
ł	2000		
ł			NATIONAL NATIONAL DESCRIPTION OF THE PERSON NATIONA
١		ANDERSON OF THE AND PROPERTY OF THE AND PROPERTY AND ADDRESS OF THE AND ADDRESS OF THE AND ADDRESS OF THE AND ADDRESS OF THE A	
5_[35
٦		SAND with clay, orange-brown, damp, SP-SC	
ŀ			
ŀ			
ļ			
l			
ю			40
†		SAND with clay, orange-brown, damp, SP-SC	
. ł		Will ody, stange brown, damp, or -oo	
42 L		<u> </u>	42

Notes and Additional Data/Info. (Specify if Other Materials Used):
Total Well Depth = 60 ft bls

Well Casing/Pipe: Diam. and Type = 2-in Sch. 40 PVC; Solid Length = 50 ft bls; Screen = 10 ft, 0.020-in Gravel Filter Pack = 9_50-lb Bags; Type = Pea Gravel; Placed from 60 to 48 ft bls (measured)

Annular Seal: Type = Fine Sand/Bentonite; Thickness = 2/2 ft; Placed from 48 to 44 ft bls (measured)

Grout = 10 94-lb Bags of Cement Grout to Surface;



11		G FIE	LD REPORT	Boring Number: GEW-2	Page 2	2 of 2
	oject Name:		County Central Remediation			
	oject Number:	0386	0-038-01 T			Well Details
Depth 42	ASTM D1586 per 6" N			Description of Soil		
-]
			SAND with clay, yellow-brown, S	P-SC		
⁴⁵ _	January .		SAND with clay, yellow-brown, S	P-SC/SC	45_	
			O' HIS Will Glay, Yollow Slowin, C		***************************************	
50_			SAND with clay, yellow-brown, Sl	P-SC/SC	50	
55				1441 (Philippine) 27/40 (1447)	······································	
55 _			SAND with clay, light yellow-brow	ın. SP-SC	55_	
	20000000					
			MATERIAL CONTROL PROGRAMMENT OF STREET, A PARTY NAMED NOTICE OF THE STREET, A PARTY NAMED NAMED OF THE STREET,	under er fra 1974, der 1 721 en 1974 e n 1872 en 1872 en 1872 en 1874 en 187	appappaannyssy lageniae habbypsees lad vool yezh yezh euroezon e nelsjel et elabelek uitalaet eoube	
60					60	
"-	1 contract		SAND with clay, orange-brown, S	SP-SC/SC	OU	
			Boring overdrilled to ~ 62 feet	ERS AND ARROCATION FOR THE PROPERTY OF THE PRO	No wereneg tianed 300 gree and 2500 are an experience state the contract of th	
65	Januar .			99-7-MAZIMA 1207-2-7-9-8-7-9-7-9-7-9-7-9-7-9-7-9-7-9-7-9-7	65	
"-			WORKSHOOD A THE HOUSE AND			
						.]

70			**************************************	HAS THE FROM MET FOR STORY AND	70	
" -			Sparts are considerated and a spart of the s	A CANADA MANANA MANA	Secretaria de la compania de la comp	1
			NAMES AND STREET OF THE STREET		notine endographistic et et addition de dictions de l'exceptive service de l'exceptive de l'exce	
75	المستسمين	İ	JACON PRINTERS IN JUNE SER BARRON, OR SPORT TO THE SERVENCE (SECTION 1) JUNE AS THE SECTION OF THE SERVENCE AS THE SECTION OF	Kat (1) 3) sistemat silverrar fert secretar, som er fremstade med fertil fram frem kreden med en særende sasten forsærende Katen fra	75	
_						
				adda seele noosee committe rennet in, sel ja seelem etter a viint doors, taekarin, tit suura seela 1 Bassiniskalaansa soosa 10 caasaa		

80			CENTROLEUR LIEBERCHANDER IN DIELEGAL LEVERAL EN DER DIE DE SENERO DE DES DE DES DE DES DE DES DE DES DE DES DE	BOOMBACK CACATICE FOR CHARLES HAVE THE THE WAS HITCH IT R. P. 75 H. P.) WHI TO THE REPORT OF THE PROPERTY CAMPACIAN AS INC.	80	1
			MADE ON THE STATE OF COMPANY CONTROL OF THE STATE OF THE	LIMPAN SACONASSIMTERS TELEGOCOTO (MAIN MATERS STREETH ART) MET HONORY PROSTRET PROSTRETOR AND	PROBECUMELAS NATURS AND CONTROL AND CONTROL CONTROL CONTROL CONTROL OF THE CONTRO	
			· I I I I I I I I I I I I I I I I I I I	nga magamatan da pangan kana ang manang manang kanang kanang kanang manang manang manang pangan da pangan ng m		
85_					85	
			AND AND ADDRESS OF THE STATE OF			
87 Note	a and Additi	1 D-4-	Under Connected to Other Manager 11	204):	87	L
NOTE	s and Addition	ai Data	Info. (Specify if Other Materials U	ocu).	JONES	State and some was a sure
					EDMU	UNDŜ
					ENGINEERS ARCHITECTS	SCIENTISTS

Project Name: Citrus County Central Remediation

Project Number: 03860-038-01 Drilling Contractor: Huss

Drilling/Sampling Methods: Hollow-stem auger

Boring Number: GEW-3 Page 1 of 3 Test Boring Completed: 3/8/2010, Well Completed: 3/8/2010

Jones Edmunds Field Geologist: M. Hays

Elevations: Ground: 112.58 ft NGVD 29 (Surveyed by Citrus County)

Well Details рег 6" Description of Soil SANDY CLAY, red-brown, dry, CL CLAYEY SAND, orange-brown, SC 10 10 SAND with clay, yellow-brown, SP-SC SAND, light yellow, fine-grained, damp, SP 15 SAND, very light yellow/white, very fine-grained, SP 20 20 SAND, white, very fine-grained, damp, SP 25 25 SAND, white/very light yellow, very fine-grained, damp, SP 30 SAND, light yellow-brown, fing-grained, damp, SP SAND, light yellow-brown, fine-grained, damp, SP SAND, very light yellow, fine-grained, damp, SP

Notes and Additional Data/Info. (Specify if Other Materials Used): Total Well Depth = 100 ft bls

Well Casing/Pipe: Diam. and Type = 2-in Sch. 40 PVC; Solid Length = 90 ft bls; Screen = 10 ft, 0.020-in Gravel Filter Pack = 6 50-lb Bags; Type = Pea Gravel; Placed from 100 to 88 ft bls (measured) Annular Seal: Type = Fine Sand/Bentonite; Thickness = 1/3 ft; Placed from 88 to 84 ft bls (measured) Grout = 20 94-lb Bags of Cement Grout to Surface;



				LD REPORT Boring Number: GEW-3	Page 2 of 3
	oject Nam oject Num			s County Central Remediation 0-038-01	
=	SPT Da	ita	T		Well I
th _	ASTM D1 per 6"	1586 N		Description of Soil	
				SAND, white to light yellow-brown to white, fine-grained, damp, SP	45_45
				SAND, write to light yellow-brown to write, line-grained, damp, or	
					W
-					50
				SAND with silt, orange-brown, fine-grained, SP-SM	
				SAND, white/very light yellow, fine-grained, damp, SP)-1-10 Carl Late 1-10
1				(a) (a) (b) (a) (b) (a) (b) (a) (b) (b) (b) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	i i i i i i i i i i i i i i i i i i i
					55
				SAND, orange-brown to white, fine-grained, SP	
					ARMAN C FEATAL & CASSA BY OF THE PROPERTY COMMENTS THE CO
					2 Annual of the Committee of Committee of the Committee o
			1111111		60
	المستمديدين			CLAYEY SAND, red-brown, damp, SC	
Ì					
				SAND, light yellow, damp, SP	
					65
1	Janaanaan Janaan Ja			SAND with clay, orange-brown, SP-SC	
ľ					
ļ				SAND, light yellow, fine-grained, SP	
					70
+				SAND with clay, yellow-brown & orange-brown, damp, SP-SC	70
ŀ	annana.			SAND Will day, yellow-blown a diange-brown, dainy, or -00	
Ţ					
ļ					40 TEININ MICHAEL SENIOR AND
+				CAND WE THE THE COLOR	75
ŀ				SAND with clay, orange-brown, SP-SC	Andrew Co. 10 (10 (10 (10 (10 (10 (10 (10 (10 (10
ŀ					
-					
4					80
ŀ				SAND with clay, orange-brown, SP-SC	
ŀ					EXT INC ENCORPORATION TO MAKE MAKE MAKE TO COMPLETE THE OPEN DISCUSSION AND
t					
1					85
-				SAND, light yellow, fine-grained, minor clay, SP	
-1			<u> </u>	/Info. (Specify if Other Materials Used):	87

Project Name: Citrus County Central Remediation 1980 38-01 3	TE	ST BORIN		LD REPORT	Boring Number: GEW-3	Page 3	of 3	
Part Color Part			Citrus	County Central Remediation				
		SPT Data	0300	J-036-01			Well De	etails
SAND, light yellow, fine-grained, SP SAND, light yellow, fine-grained, SP SAND, light yellow, fine-grained, SP Boring over-drilled to ~ 104 feet to allow for cave-in, well set at 100 feet 105 116 117 118 119 119 120 130					Description of Soil			
SAND, light yellow, fine-grained, SP SAND, light yellow, fine-grained, SP SAND, light yellow, fine-grained, SP Boring over-drilled to ~ 104 feet to allow for cave-in, well set at 100 feet 105 116 117 118 119 119 120 130	-							
SAND, light yellow, fine-grained, SP SAND, light yellow, fine-grained, SP SAND, light yellow, fine-grained, SP Boring over-drilled to ~ 104 feet to allow for cave-in, well set at 100 feet 105 116 117 118 119 119 120 130	00	2000						
SAND, light yellow, fine-grained, SP Boring over-drilled to ~ 104 feet to allow for cave-in, well set at 100 feet 105 116 117 117 118 118 119 125 130	90 -			SAND, light vellow, fine-grained, SP		90		
SAND, light yellow, fine-grained, SP 100 Boring over-drilled to ~ 104 feet to allow for cave-in, well set at 100 feet 105 110 110 1110 1125 125 125								
SAND, light yellow, fine-grained, SP 100 Boring over-drilled to ~ 104 feet to allow for cave-in, well set at 100 feet 105 110 110 1110 1125 125 125						,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
SAND, light yellow, fine-grained, SP Boring over-drilled to ~ 104 feet to allow for cave-in, well set at 100 feet 105 110 110 1110 1115 1125 125	95					0.5		
100 100 100 100 100 100 100 100 100 100	_			SAND, light yellow, fine-grained, SP		95		
Boring over-drilled to ~ 104 feet to allow for cave-in, well set at 100 feet 105 106 110 1110 1110 1120 120 130 130						**************************************		
Boring over-drilled to ~ 104 feet to allow for cave-in, well set at 100 feet 105 106 110 1110 1110 1120 120 130 130		22.22.22		***************************************				
Boring over-drilled to ~ 104 feet to allow for cave-in, well set at 100 feet 105 106 110 1110 1110 1120 120 130 130	100	2000		ATT THE RESIDENCE OF THE PROPERTY OF THE PROPE		100	∷≣	
105 105 105 105 110 110 110 110 115 115			1	THE COLUMN TWO IS AN ADDRESS OF THE COLUMN TWO IS AN ADDRESS OF THE COLUMN TWO IS A DESCRIPTION OF THE COLUMN TWO IS A DE		100		*
110 110 110 115 115 115 125 125 132				Boring over-drilled to ~ 104 feet to a	low for cave-in, well set at 100 feet	***************************************		
110 110 110 115 115 115 125 125 132	!			Januarius imperius (menterioris (menterioris (menterioris (menterioris (menterioris (menterioris (menterioris (m		norga estas yd <mark>aniessassasyssydniesiasyss</mark> ys		
110 110 110 115 115 115 125 125 132	105	in a mark				105		
115	_			MALIFER SCHOOL MAN TO SERVICE THE PRINTED CONTROL OF T	**************************************			
115		,,,,,,,,,						
115				PACCAMON SAMON SAMON DAMEN OF SECTION SAMON AND SAMON		***************************************		
115	110	1000		OPEN THE CONTRACT COMMENTS AND ADMINISTRATION OF THE CONTRACT CONT		110		
120	-					_		
120			İ	The transfer of the transfer o	THE STATE OF THE S			
120				-4444579466474.4446446666666666666666666666666				
120	115			**************************************		115		
125 125 30 30 132		200000000						
125 125 30 3132								
125 125 30 3132		and a second		NOMEROW AND THE COMMISSIONARY OF THE STATE O		de la la la la la la la la la la la la la		
30 130	120			T TREASURE TO A PARTY OF A PROPERTY OF A PARTY OF THE STATE OF THE STA	APPEN-1988-1988-1989-1989-1989-1989-1989-198	120		
30 130						***************************************		
30 130				**************************************		LEGISTECHOSTORING LONG SOPERS (CANADAMINA)		
30 130			1 1					
132	125					125		
132	ļ							
132	}			The blad a the property and the second second control of the second second control of the second second control of the second se	TO A STATE OF THE PROPERTY OF	***************************************		
132	ŀ			HER THE CONTROL OF TH	f.	101 3+ 110 m ++++++++++++++++++++++++++++++++++++		
	130					130		
	ŀ			em terrotoriement au 120 mai 1		~~>>>>=		
JONES FOM INDS	132 Note	s and Addition	al Data/	nfo (Specify if Other Materials Lland)			:	_
FOMINOS		o ana madidili	ai Data/	mo. (Opoony ii Other Materials Oseu)	JONES	5	Filtrice + E Garage	
EDMONDS						EDMU	IND	Ŝ

Project Name: Citrus County Central Remediation

Project Number: 03860-038-01 Drilling Contractor: Huss

Drilling/Sampling Methods: Hollow-stem auger

Boring Number: GEW-4

Page 1 of 2

Test Boring Completed: 3/11/2010, Well Completed: 3/11/2010

Jones Edmunds Field Geologist: M. Hays

Elevations: Ground: 111.267 ft NGVD 29 (Surveyed by Citrus County)

<u> </u>						
Depth	SPT Da				Well De	etails —
0	per 6"	N		Description of Soil		
-				SILTY SAND, dark gray/black, fill		
ii		1		SANDY CLAY, orange-brown, CL	-	
		1		CLAYEY SAND, orange/red-brown, SC	-	
ll .				OCLATET SAIND, Grangeried-brown, SC	- 1	
1					-	
∥ 5_	77			5		
				CLAYEY SAND, red-brown, SC		
	والمستعمدة					
				SAND with clay, light orange, fine-grained, SP-SC		
10				10	-	
``-				SAND, light orange, fine-grained, SP	- :::	
				John To, ngint orange, intergramed, or		
					-	
					-	
	,,,,,,				-	
15_				15		
				SAND, light orange to light yellow, fine-grained, SP		
20				20		
~~-		ļ			-1331	
				SAND, light yellow, fine-grained, SP		
					.	
,		ļ			_	
25		ĺ		25		
				SAND, very light yellow, fine-grained, SP, damp		
					-	
	مسمه مسور	ı			- 1	
30	2000			00	~	
∣৺Ⅎ	2000			SAND year light collow/white fine grained SD down	-[::::	
	,,,,,			SAND, very light yellow/white, fine-grained, SP, damp		
	2000				- 34	
					_	
35				35		
7				SAND, white, fine-grained, SP, dry		
					- 1	
		ł			- 1	
<u>, ,</u>					-	
40				40	- 333	
				SAND, white to light yellow, fine-grained, SP, damp	-	
42				. 42		
Note	e and Ad	dition	al Data	/Info. (Specify if Other Materials Used):		

Notes and Additional Data/Info. (Specify if Other Materials Used): Total Well Depth = 60 ft bls

Well Casing/Pipe: Diam. and Type = 2-in Sch. 40 PVC; Solid Length = 50 ft bls; Screen = 10 ft, 0.020-in Gravel Filter Pack = 9_50-lb Bags; Type = Pea Gravel; Placed from 60 to 48 ft bls (measured)

Annular Seal: Type = Fine Sand/Bentonite; Thickness = 2/2 ft; Placed from 48 to 44ft bls (measured)

Grout = 10 94-lb Bags of Cement Grout to Surface;



				LD REPORT	Boring Number: GEW-4	Page 2	2 of 2
	oject Nam oject Num		Citrus	S County Central Remediation 0-038-01			
	SPT Da	ta	0366	U-U38-U1			Well Details
Depti 42		1586 N			Description of Soil		
·-,					Description of con		
]		•			
45.	,,,,,,,,,,			METAPATRA BARA DE DE CONTROLIGA MANAGAMENTA DA LA CHARAGAMENTA DE CONTROLIGA DE CONTROLIGA DE L'ACADAMENTA ANGAGAMENTA		45_	
				SAND, very light yellow, fine-	grained, SP, damp		

	2000					Marca Andreas Prints (contravers, and contravers) (contravers) (contra	
50						50	
-				SAND, light yellow to white, v	ery fine-grained, SP, dry		

	grana a s			AND THE PROPERTY OF THE PROPER	***************************************	. DECEMBER OF THE PROPERTY OF	
55_	2000	1		CAND white fire arrived O		55	
	and the same			SAND, white, fine-grained, SI		***************************************	
	an and a second			MANAGEMENTE DE DESCRIPCIONES DE LOS SERVICIONES DE LA MANAGEMENTA DE MANAGEMENTO DE SENS PEROPERTICIONES DE LA TERRADA DE LA TER	**************************************	ADMINISTRATOR DE SA REEL BOOKS DE LEE FINN DE SOCIE DE SOUD LE PLANT LE DE LE DE LE DE SA VALLES LE LEADER.	
	برسده مستر			AND SECURE OF THE PROPERTY OF		#>====================================	
60_				200 MP 100	60		
		-		SAND, white, fine-grained, SI			
				Boring overdrilled to ~ 62 fee		CREATION AND THE COURT TO BROOK THAT AND COLORS FROM THE COURT FOR THE COURT COURT, AND THE COURT COUR	•
65				Make has blanker or representative and representative or the properties of the prope		65	
-				And the second s			1
						······································	
				**************************************		PMACE AND THE REST OF THE PARTY	
⁷⁰ –	2000			Definissers (15 not 16 % a second 16 or) <u>Definis</u> e (16 or) <u>Definis</u> e (16 or) polythology (16 or) polythology (16 or)	**************************************	70	l
				THE REPORT OF THE PROPERTY OF THE REAL PROPERTY OF THE REPORT OF THE PROPERTY		AT IN MINIT DEL COMMONTANIO DEL COMPONIO POR PRODOS NIMBOS ADDICIO DEL CONTRO DEL SE UNE APAL F	
75_						75_	İ
				**************************************	"Victor (1980) (1984) (1984) (1984) (1984) (1984) (1984) (1984) (1984) (1984) (1984) (1984) (1984) (1984) (1984)	MARRIAN ROMANIONAN, RICHAROMONION MUNICIPY REARNES 2011 OF VIRENCIPORAT OR 2 SOON ENGINEER NEW SOON	
				WHICH IN A PET COM COMMUNICATION OF THE THREE STREET AND COMMUNICATION OF THE PROPERTY OF THE		NORTH TO DESCRIPT THE STATE OF	
80				MESCENSORANI POR POR POR MANAGEMENTO ANT PARTY AND PARTY	**************************************	80	
-	ما الما الما الما الما الما الما الما ا			nadioahatu utahdan berdadahan dan utakkadakang salaga di Araus (kurka lah dan pak indipunkan berdada kada kada kada kada kada kada kada) pro namen vinci prom mala managa (managa panga) managa panga panga panga panga panga panga panga panga panga	
			1 [MEAN PROFITE TO SECURE AND ADDRESS AND ADD			
				THE STATE OF THE S	N TOTA TO THE STREET, AND A ST	akkapin dalam markaman pada kanda	

85_						85_	
87				MAPP NOTABIONARIAN SERVICIO NA PRESIDENTE ANTONIO PROPERTO A LA PRESIDENTE A PER PROPERTO DE PROPERTO A LA PRESIDENCIA DE PROPERTO DEPARTO DE PROPERTO	THE RESIDENCE OF THE PROPERTY	87	
	s and Add	ditiona	al Data/	Info. (Specify if Other Material	s Used):		
				· · · •	•	JONES EDMU	Control of the Contro
						EDMU	JNDS
						ENCINEEDS ADCIDENTE	CCIENTICTO

Project Name: Citrus County Central Remediation

Project Number: 03860-038-01 Drilling Contractor: Huss

Drilling/Sampling Methods: Hollow-stem auger

Boring Number: GEW-5

Page 1 of 3

Test Boring Completed: 3/10/2010, Well Completed: 3/10/2010

Jones Edmunds Field Geologist: M. Hays

Elevations: Ground: 110.531 ft NGVD 29 (Surveyed by Citrus County)

	SPT Da	ata	$\overline{\Box}$				Well De
Depth 0	ASTM D	1586			December of Oall		
	per 6"	N			Description of Soil		
		1			CLAYEY SAND, orange-brown, SC	-	
	22.00	1					
		-				***************************************	
5	2000	1				5	
٦-	200	† '			SAND with clay, orange-brown, fine-grained, SP-SC	<u>`</u>	
		1 /	:		of the man oldy, ordings storm, this granted, or co		
		1 '	:				
		1 !				**************************************	
٥]	:			10	
] !	:		SAND, orange-brown to very light yellow, fine-grained, minor clay, SP-SC to SP		
] !					
		. !	:				
]					
4				:::::		15_	
١					SAND, white, fine-grained, SP, damp		
-		4					
-							
}							
+		1 1			CAND white for residual CD	20_	
1				:::: :]	SAND, white, fine-grained, SP	***************************************	
ł							
1							
.						25	
1					SAND, white/very light yellow, fine-grained, SP		
[
			::		TO THE PROPERTY OF THE PROPERT	Network Marie or to the same	
	200000000					30	
֡֡֞֞֞֞֞֜֞֞֡֡֡֡֡֞֜֞֞֜֞֜֞֡֡					SAND, light yellow, fine-grained, SP, damp		
ļ						/10/10/10/10/10/10/10/10/10/10/10/10/10/	
ļ			::				
Ļ			::				
4						35	
ŀ	***************************************		::		SAND, light yellow-brown, fine-grained, SP		
ŀ		.]	::				
ŀ						I	
ŀ				:			
ᡝ	2000			:::: : }	CAUD Bull out on the market of OD	40	
,				:::: :	SAND, light yellow, fine-grained, SP	I	
2 _		ا ــــــــــــــــــــــــــــــــــــ	<u> </u>	<u> </u>	Info (Specify if Other Materials Used):	42	

Notes and Additional Data/Info. (Specify if Other Materials Used): Total Well Depth = 100 ft bls

Well Casing/Pipe: Diam. and Type = 2-in Sch. 40 PVC; Solid Length = 90 ft bls; Screen = 10 ft, 0.020-in Gravel Filter Pack = 6.50-lb Bags; Type = Pea Gravel; Placed from 100 to 88 ft bls (measured)

Annular Seal: Type = Fine Sand/Bentonite; Thickness = 1/3 ft; Placed from 88 to 84 ft bls (measured)

Grout = 20 94-lb Bags of Cement Grout to Surface;



	NG FIELD REPORT	Boring Number: GEW-5	Page 2 of 3
Project Name: Project Number:	Citrus County Central Remediation c: 03860-038-01	1	
SPT Data	. 03000-030-01		Well D
th ASTM D1586 per 6" N		Description of Soil	
1	CAND Eshtuallou fino are		45_
	SAND, light yellow, fine-grai	ned, SP	
	The second secon		
and the same			50
	SAND, light yellow, fine-grain	ned, SP	
	THE REST WAS A STATE OF THE PROPERTY OF THE PR		55
	SAND, light yellow, fine-grain	ned, SP	
	CAND with clay light grange	*	
	SAND With Clay, light orango	e-brown, fine-grained, SP-SC	
,,,,,,,,,			60
المستستدر	SAND with clay, orange-brow	wn, SP-SC	
2000			AND AND AND AND AND AND AND AND AND AND
			es
	SAND with clay, orange-brow	wn SP-SC	65
	SAND, very light yellow, fine-	-grained, SP	
	SAND with clay, orange-brow	wn, SP-SC e, fine-grained, trace clay, SP	70
January	SAND, light youdir a orange,	, fine-grained, irace day, ог	
	The state of the s		talk a lienek hak-nekki kidenak di di kapir uni, bijopo yon jugi kapiryopaler.
	fine a		75
2000	SAND, orange-brown, fine-gr	rained, trace clay, SP	APTRIBUTES IN A USE ALL THIS IS A STORAGE AND A STORAGE AN
	Annual Contract Annual Contract Contrac		CT-75 EARNAN PORT-BERT (A) PORTBERT SHANKS SHANKS SHANKS (1995 SAY
			80
	SAND with clay, light orange,	, SP-SC	
Trans.	Mark 1977 to 27 The Principles Control of the Contr		
	Contraction of the Contraction o		
			85
	SAND with clay, light orange,	, SP-SC	
			87
es and Addition	nal Data/Info. (Specify if Other Materia	Is Used):	NES
		ENCINE	EDMUNE ERS I ARCHITECTS I SCIEN

TEST BORING FIEI			G FIE	LD REPORT Boring Number: GEW-5	Page 3 of 3		
	oject Nam oject Num		Citrus	County Central Remediation 0-038-01		÷	
	SPT Da	ta	1	J-U38-U1	•	Well	Details
Depth 87	ASTM D1 per 6"	586 N		Description of Soil			
-							

90_				SAND with day light grange fine grained SD SC	90		
				SAND with clay, light orange, fine-grained, SP-SC			

					ECOLOR DE TRANSPORTE DE TRANSPORTE DE TRANSPORTE DE TRANSPORTE DE TRANSPORTE DE TRANSPORTE DE TRANSPORTE DE T		
95_					95 _		
				SAND, light orange, fine-grained, trace clay, SP	10000 10 1000 AN 100		
	2000				HEER AND A STATE OF THE STATE O		
100					100		
				SAND, light orange, fine-grained, trace clay, SP			
				Boring over-drilled to ~ 104 feet to allow for cave-in, well set at 100 feet			
					CONTROL OF THE PROPERTY OF THE		
105					105		
					Metrops - vincertar denine a secra de despesa processor na estado		
			ļ ·		#*************************************		
					Here are conserved to the conserved to the safe in		
110	22 - 2 - 2 - 2 - 2				110		
7							
					(Cranes and Company of the Practice of the State of the S		

115					115		
		ŀ					
				WHITE OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF T	-100PH (###8999590000000000000000000000000000000		
120				1998 1998 1998 1998 1998 1998 1998 1998	120		

125					125		
			i		EARLEMECONMENT. OF FOR FOUR PORTS TO SERVICE		
130					130		
132					132		
Note	s and Add	ditiona	al Data/	Info. (Specify if Other Materials Used):	EC	State of the State	***
				JONI	ES EDMU	INI	nè
				ENCINEEDS	L DIVIC	CCIEN	UTISTS