



Cybersecurity

21.3 The Final Report

Case Report National Gallery DC

Tracy's iPhone [2012-07-15-National-Gallery]

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Table of Contents

[Case Report](#)

[National Gallery DC](#)

[Tracy's iPhone \[2012-07-15-National-Gallery\]](#)

[Table of Contents](#)

[Executive Summary](#)

[Equipment and Tools](#)

[Details of Tracy's iPhone](#)

[Evidence to Establish Personas](#)

[Evidence relating to theft of valuable stamps](#)

[Evidence relating to defacement of museum art](#)

[Plot Timeline](#)

[Conclusion](#)

[Appendix A: Correspondence Evidence](#)

[Appendix B: WiFi and GPS Location Information](#)

Executive Summary

On January 21, 2016, Digitech Inc. was called in to assist the National Gallery, Washington D.C. (NGDC) case involving the conspiracy associated with the theft of valuable stamps and defacing of museums at the NGDC.

- Tracy is a suspect in the aforementioned conspiracy.
- As part of the investigation, Tracy's iPhone was taken into custody.
- Digitech, Inc. was tasked with investigating evidence relevant to the aforementioned conspiracy.

As described fully in the report, Digitech, Inc. made the following findings.

Digitech conducted an investigation into Tracy Sumtwelve, an employee at the National Art Museum, suspecting her involvement in a plan to steal multiple pieces of art. Collaboration with her brother and an individual known as "King" was uncovered, implicating her in the theft. Evidence obtained from SMS messages and emails revealed Tracy's financial struggles, providing a clear motive for her actions.

The Digitech team utilized various tools within a Kali Linux environment, including Autopsy and SQLite browser, to analyze digital evidence. Through image parsing from Tracy's phone, her address book was retrieved, allowing examination of text messages and emails crucial to the investigation. Autopsy, in particular, facilitated visual representation of data organization within Tracy's iPhone, shedding light on the use of aliases, such as "Coral" for herself and "Perry" for her brother Patt.

Moreover, the investigation revealed Tracy's communication with an individual identified as Carry, suggesting a broader network involved in the theft scheme. By looking into Tracy's contacts and communication patterns, the Digitech team gained valuable insights into the extent of her involvement and potential accomplices.

Overall, the findings highlight Tracy's central role in the art theft, driven by her financial motive of keeping her daughter enrolled in her current school. The use of forensic tools on digital evidence provided an understanding of the case, emphasizing the importance of SOC analysts doing investigations and using different techniques in uncovering criminal activities.

Equipment and Tools

- Autopsy
- Sqlite Browser
- Kali Linux
- Google Maps
- Nano
- Unix Timestamp Converter (web base)

The equipment used in this analysis includes Autopsy was used to analyze the image from Tracys iPhone. Sqlite Browser Nano (Text Editor) was used to parse through the text messages and e-mail. Kali Linux was used in order to crack passwords to encrypted files and run forensics tools. Google Maps was used to confirm the geolocation of the phone and Unix Timestamp Converter (web base) was used in order to extract readable time for sms and e-mails.

Details of Tracy's iPhone

Name	Findings	Location in iPhone image file
Model	iphone1,2	vol5/mobile/Library/Logs/AppleSupport/general.log
Host Name	Tracy Sumtwelves iPhone	vol5/logs/lockdownd.log
OS Version	iPhone OS 4.2.1 (8C148)	vol5/mobile/Library/Logs/AppleSupport/general.log
Install Time	6/6/2012 12:03:28	vol5/mobile/Library/Logs/AppleSupport/general.log
User Email	tracy.sumtwelve@nationalgallerydc.org tracysumtwelve@gmail.com	vol5/mobile/Library/Mail
Phone Number	(703)-340-9661	vol5/logs/lockdown.log.1
Serial Number	86004482Y7H	vol5/mobile/Library/Logs/AppleSupport
ICCID	89014103255195342366	vol5/logs/lockdownd.log.1
IMEI	01201003735398	vol5/root/Library/Lockdown/activation

		n_records/wildcard_record.plist
MD5 Hash	34c4888f095dc3241330462923f6fea5	
SHA256 Hash	71aed05a86a753dec4ef4033ed7f52d6 577ccb534ca0d1e83ffd27683e621607	

Evidence to Establish Personas

This section establishes aliases, phone numbers, emails addresses associated with each person, and relationships between each individual.

Tracy (Coral):

Phone Number: (703) 340-9961
 Personal Email: tracysumtwelve@gmail.com
 Work Email: tracy.sumtwelve@nationalgallerydc.org
tracy.sumtwelve@nationalgallerydc.com

Hidden personal email: coralbluetwo@hotmail.com

Relationship: Accused

Pat (Perry):

Phone Number: (571)308-3236
 Email: patsumtwelve@gmail.com
perrypatsum@yahoo.com

Relationship: Brother

Terry:

Phone Number: (703)829-6071
 Email: terry_gin@inter-tel.com
 Relationship: Tracy's Daughter

Joe:

Phone Number: Unknown

Email: joe.sum.twelve@gmail.com

Relationship: Tracy's ex-husband

Carry:

Phone Number: (202) 725-2124

Email: catsumtwelve@gmail.com

carrysum2012@yahoo.com

Relationship: An acquaintance of Tracy

King:

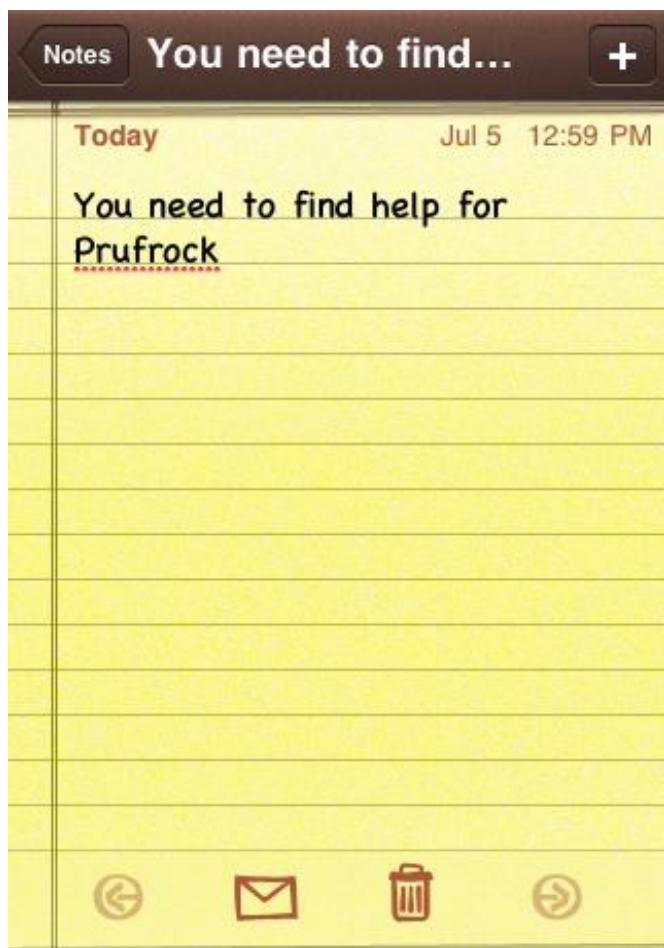
Phone Number:

Email: throne1966@hotmail.com

Relationship: Patt's contact

Given the above information the relationships are as follows, Tracy is the primary suspect and owner of the iPhone we're investigating. Terry is Tracy's daughter who had no participation in the heist. Joe is Tracy's ex-husband and also had no participation in the heist. Patt is Tracy's brother and was an active participant. Carry is an acquaintance of Tracy and was also an active participant. King has no direct relationship to Tracy but is a contact of Patt.

Evidence relating to theft of valuable stamps



A screenshot of this note was found which we believe served as a financial motive for Tracy. Prufrock is the expensive school that her daughter, Terry, attends and her Ex-husband Joe is now refusing to pay for it. (Email Artifact #6)
Terry doesn't want to leave the school however. (SMS Artifact #5)

Tracy contacted her brother to Pat to propose a heist at the museum and the earliest evidence we found was when Pat accepted the proposal by email (Email Artifact #1)
Pat then emailed King for assistance with the heist. The email shows that Patt threatened King's parole status to possibly coerce participation. (Email Artifact #8)
A reply email from King shows that he accepted Patt's proposal to join the heist and sent an attachment called 'needs.txt' containing a list of tools required. Patt forwarded the request to Tracy. (Email Artifact #12)

Tracy sent an email to herself from her work email to her hidden email containing 'documents.zip', an archive that contains insurance documents of the stolen stamps. (Email Artifact #9)

```
root@kali:~/casedata/2012-national-gallery/Export/43149-INBOX.mbox/Attachments/61/2# fcrackzip -u -D -p /usr/share/wordlists/rockyou.txt documents.zip  
  
PASSWORD FOUND!!!!: pw == Hercules  
root@kali:~/casedata/2012-national-gallery/Export/43149-INBOX.mbox/Attachments/61/2#
```

Cracking the password for documents.zip

We also found multiple photos of stamps which we were able to correlate to the insurance documents. (Table below)

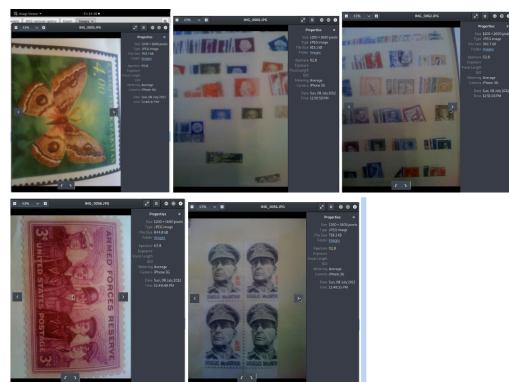
Armed Forces Reserve	Stamp of Kazakhstan 2	BradyCo.
		
Douglas McArthur	Nederland	Mongolia
		
Woman's Profile	Stamp of Kazakhstan	1929 Nepal
		

(Table) Images of stamps found on Tracy's iPhone



(Left) Image of collection of stamps mentioned in insurance documents and various other stamps found on Tracy's phone

The images show that they were taken prior to the heist. The Geo-Location of these images shows that they were taken at the Museum, meaning that Tracy took them onsite.



Evidence relating to defacement of museum art

This sub-section provides details regarding the evidence found as it relates to the defacement of museum art.

Looking through text messages and email correspondence between Carry and Tracy we were able to establish a strong intentional indication that both collaborated to ultimately make The Flashmob at the Museum a distraction for the malicious defacement of the art. However there is no strong evidence that correlates direct involvement with the defacement of Museum Art itself nor strong Evidence that Tracy knew indeed about Carry secondary intentions. But according to Artifacts No 13 and No 11 (In reference to the Email Correspondence between Tracy and Carry - Appendix A) we can establish that Tracy accepted sharing sensitive data about security shifts, and also that she will sneak in a tablet into the gallery, through security. While also getting a generous compensation proposed by Carry in the same email history as we can see from (Artifact N10 - Appendix A - Email) Indicating that she not only accepted a bribe to commit a crime, but also shared sensitive information, abusing her privileges as Supervisor. Later on we can establish with the help of Artifacts No 6,7,13 and 14 (in reference to SMS exchange Correspondence Evidence Appendix A) that no only they successfully arranged a meeting at bubbas Grill Restaurant a few days prior to the attack, but also indicating they indeed met outside the Museum on July 11 2012 to exchange the Tablet in order to sneak it inside, as we can see from Artifact No 21 and No 22 (Appendix A Correspondence - SMS Notes) where Carry informs Tracy that she is outside the Museum, and Tracy answer to meet her outside the museum, and also that she is almost there. Suggesting they had indeed met to intentionally organize something somewhat above the rules as first, which led to something of higher scale later, the defacement of the Museum Art.

Plot Timeline

Timeline	Evidence	Email/SMS
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6/19/2012 20:06:33	Pat's messages Tracy and agrees to her proposal and wants her to use an alias. Message sent in French.	Email
6/19/2012 21:38:59	Pat's message to Tracy contains Crazydave1.mp3 with instructions on how to install a VM. MP3 Artifact is missing (consulted Tutor and our TA Ash, Artifact most likely no longer exist in assignment).	Email
6/28/2012 19:31:33	Email thread between Pat and Tracy. Provides <i>mens rea</i> for Pat too, as he claims they are both having financial difficulties. Pat asks Tracy to perform more dangerous reconnaissance work. Tracy mentions insurance papers are a possible lead.	Email
6/29/2012 14:21:56	Email Thread between Tracy and Pat. Concerns over IA investigating.	Email
7/2/2012 20:00:31	Email Thread between Pat and Tracy. Details about cheap shipping information and the rare stamp collection.	Email
7/3/2012 13:29:37	Email Thread between Joe and Tracy. Joe states he will not pay Terry's Tuition unless Terry moves in with him (Joe). Provides Tracy's mens rea.	Email
7/3/2012 14:04:32	F: Terry T: Tracy Terry replies to Tracy claiming that she would rather stay with her dad, so she can continue attending her school: Prufrock.	SMS
7/5/2012 18:18:23	F: Carry T: Tracy A plan was made for Carry to meet Tracy the next day at Bubba's Grill to discuss the supposed Flash Mob.	SMS
7/6/2012 15:27:51	Pat emails Tracy referencing a third-party accomplice he wishes to introduce her to. The aforementioned person being the Robber, King.	Email
7/6/2012 15:49:31	Pat introduces King to Tracy. Pat also blackmails King into being an accomplice by	Email

	threatening his parole.	
7/6/2012 16:27:16	F: Carry T: Tracy Carry messages Tracy to inform her she has a table inside Bubba's Grill.	SMS
7/9/2012 14:44:11	Tracy uses her personal email to send her pseudo-email (coralbluetwo@hotmail.com) a documents.zip file. The zip file contains 3 Stamp Insurance Files that have the value of 9 stamps within the National Gallery.	Email
7/9/2012 18:18:47	Tracy emails Carry. They discuss sneaking a Tablet into the National Gallery. Carry claims the tablet is to take pictures of a flash mob event she is organizing.	Email
7/10/2012 13:48:40	Tracy agrees to sneak in the tablet for Carry (Defacer). Carry is an accomplice to Tracy and a point of plausible deniability.	Email
7/10/2012 15:24:57	Pat emails Tracy with a needs.txt file that King made. The text reveals equipment that the accomplice King will need for the robbery.	Email
7/10/2012 15:26:19	F: Pat T: Tracy Pat messages Tracy informing her that needs.txt should be converted into a .pdf file.	SMS
7/11/2012 17:06:19	Tracy sends Carry the security guard shift schedule. Carry promises her additional money for the information. Could be used as plausible deniability, as she had to give the shift schedule of security for Carry's "harmless" flash mob.	Email
7/12/2012 16:12:07	Shared album can be used for a possible cover story, as Carry claimed the tablet was being utilized to take pictures of the flash mob event.	Email

Conclusion

Evidence found on Tracy's iPhone indicated the following:

Based on the evidence gathered, it is evident that Tracy was responsible for the theft of the stamps from the museum. However, the evidence does not definitively establish any intention to deface the museum. Examination of Tracy's correspondence via email reveals her use of the alias "Coral" to communicate with her brother Patt, alias "Perry," and Patt's contact, King indicating a coordinated effort to carry out the theft. Also, the discovery of a collective phone call between these three individuals on the morning of the incident reinforces this collaboration. Additional evidence, including Tracy's presence in the museum as shown by her wifi locations, the nature of images on her phone along with their timestamps, further corroborates her involvement in the crime. It is clear that Tracy's motivation for committing this act was financial necessity.

Another individual involved was Carry. Tracy planned with Carry through sms to meet and bring a tablet into the Museum. Colluding with Carry provided additional financial gain for Tracy, which also explains why Tracy leaked the security rotation information to Carry. While Tracy's financial situation motivated her to steal the stamps, there is no evidence suggesting her involvement, or motive for, the defacement of the museum.

Appendix A: Correspondence Evidence

This subsection will provide an amalgamation of the email and SMS correspondence evidence.

Correspondence Evidence

Group members: Niccolo Arboleda, Shanice Stewart, Andre Jesus, Aquib Ajeem, Malia Khan-Siddique, Darwin Hawezi, Kevin Dyal, Muhamad Shakeel, Amir Nehzat

EMAIL AND SMS MESSAGE CONTENT

Email Master Timeline of NGDC				
Artifact #	Timestamp	Header Information	Key Information	Evidence Location
1	6/19/2012 20:06:33	F: patsumtwelve@gmail.com T: tracysumtwelve@gmail.com Subject: Paris Speak and answer	<p>Pat sends a covert email to Tracy. The email itself is written in French disclosing that Pat accepted her proposal and asks her to use an alias for further instruction. The alias being her pseudo-email (coralbluetwo@hotmail.com). Pat's alias will later be (perrypatsum@yahoo.com).</p> <p>Email Body: Je considérais votre proposition. Ma réponse est oui ! Vous avez dit que vous avez un alias. Envoyez-moi l'adresse e-mail, et je vais vous fournir des instructions supplémentaires.</p> <p>Translation: I have considered your proposal. My answer is yes. You said you have an alias. Send me the email address and</p>	/img_tracy-phone-2023-09-02.E01/vol_vo5/mobile/Library/Mail/Protected Index

			I will provide you with further instructions.	
2	6/19/2012 21:38:59	F: perrypatsum@yahoo.com T: coralbluetwo@hotmail.com Subject: Crazydave by the VMs Attachment: Crazydave1.mp3	<p>Pat emails Tracy (Coral) with instructions to install a Virtual Machine concealed within an audio file. The audio file architect does not exist anymore, but we know it is instructions for a Virtual Machine based on email from the Whats going on email thread.</p> <p>Email Body: "Hey Coral, Just got your email. That took longer than expected! Oh well! You've got to check out this new song by the VMs. I love the base. Tell me what you think!"</p> <p>Attachment: Crazydave1.mp3</p>	/img_tracy-phone-2023-09-02.E01/vol_vo5/mobile/Library/Mail/POP-corabluetwo@hotmail.com@pop3.live.com/INBOX.mbox/Messages/3896FC6F-A083-4D39-B0A2-CE68368D44CA.emlx
3	6/28/2012 19:31:33	F: perrypatsum@yahoo.com T: coralbluetwo@hotmail.com Subject: Whats going on	<p>Email Thread: Whats going on</p> <p>Pat emails Tracy, requesting that she start using aliases and the Virtual Machine setup for their communications to enhance security. He also mentions that due to their financial difficulties, they might need to consider riskier or illegal activities. He informs her that some of his colleagues are skilled in these areas and that he will keep her updated if any opportunities arise. In the meantime, he suggests they continue brainstorming ideas. Tracy mentions insurance type documents that may hold valuable intel.</p> <p>Email Thread Body: Pat: Great, now that we have everything set up it would be better to do most of our communication here and on your new setup. This might keep us a little bit safer. I know</p>	

		<p>money is rough for both of us, so we may have to push the envelope a bit. A few friends from around the office are really good about these types of things, If I find out anything interesting I will shoot you an email. In the meantime let's try to shoot some ideas and back and forth.</p> <p>Your friend, Perry</p> <p>Tracy: I know what you mean. If anything comes up around the office that we can maybe... get in on, please lets try to do so. Kiddo is getting really bent out of shape about possibly having to switch schools. I have been paying some more attention to the memos and papers that come across my desk. We get a bunch of insurance type documents place values on a certain objects. If anything stands out, I'll let you know. Be careful! We have enough problems as it is, we can't be getting in trouble or losing our jobs. Nothing special has turned up here, but I am still keeping an eye out. We usually start to host interesting events this time of the year, I'm sure something will pop up.</p>	
4	6/29/2012 14:21:56	<p>F: perrypatsum@yahoo.com T: coralbluetwo@hotmail.com</p> <p>Subject: Re: What's going on</p>	<p>Email Thread: What's going on</p> <p>Pat reassures her that he will find a way, though he expresses nervousness because IA has been investigating.</p> <p>Email Thread Body:</p> <p>Pat: Coral, Will do, but don't worry. If something like we talked about happens to pop up, we can definitely pull something like this off. Take care,</p> <p>Tracy: Okay, we will work something</p> <p>/img_tracy-phone-2023-09-02.E01/vol_5/mobile/Library/Mail/Protected Index</p>

			out. I just need to be careful, IA has been sniffing around the office. Makes me nervous, but I am sure we can still make something happen.	
5	7/2/2012 20:00:31	F: perrypatsum@yahoo.com T: coralbluetwo@hotmail.com Subject: Re: Some good news	<p>Email thread: Some good news</p> <p>Following up on the earlier email about the exhibit, Tracy (Coral) mentions that after reviewing the related documents, she discovered that the exhibit is highly valuable but the shipping cost is relatively low. Pat replies, suggesting that this could indicate the exhibit is small, which would be very advantageous for them.</p> <p>Email Body:</p> <p>I think I may have come across something interesting. Everybody around the office seems to be buzzed about a foreign exhibit that is supposed to be coming over. There hasn't been any official release in writing but we have been going through quite an ordeal with all this paperwork. From what I can tell, this exhibit has to be a big deal. I'll let you know if I found out anything else. Okay, so there has been a lot of money being thrown around to get this exhibit over to us. I've been swimming through paperwork and memos all day, but none if it seems to have any solid information that could help us. I had to scan and verify some shipping information, and compared to what it usually costs to ship exhibits... this ones seems relatively cheap. I'm not sure if this is good or bad for us (or even an error), but hopefully I will be able to find out more later in the week. I was told that we are supposed to be receiving a rare collection of stamps. That would explain why the shipping information looked a bit out of the</p>	/img_tracy-p hone-2023-0 9-02.E01/vol _vol5/mobile/ Library/Mail/ Protected Index

			ordinary to me. I'm not certain of the specifics for the stamps, but they seem to be very highly valued by somebody. Maybe this is our ticket.	
6	7/3/2012 13:29:37	F: joe.sum.twelve@gmail.com T: tracysumtwelve@gmail.com Subject: Re: Regarding Terry	Email Thread: Regarding Terry Tracy emails Joe, asking if he could assist with Terry's tuition this year as it is becoming too expensive for her. Joe responds, stating that he will not pay Terry's tuition if she (Terry) is not living with him. Email Thread Body: Joe: Sorry Tracy. I'm not going to be paying for Terry's school if she's not living with me. I hope things take an upturn for you. Joe Tracy: Sorry to bother you, but I have a serious question about Terry and her school. Her tuition is getting a bit too much for me right now and I could use a little help. I hate to impose on you for this, but is there any way you would be willing to help me out with her tuition this year? Please get back to me, Tracy	/img_tracy-p hone-2023-0 9-02.E01/vol _vol5/mobile/ Library/Mail/ Protected Index
7	7/6/2012 15:27:51	F: patsumtwelve@gmail.com T: tracysumtwelve@gmail.com Subject: Re: Good News	Email Thread: Good News Tracy emailed Pat to say that she had spoken with Coral, who received some great news about her job, and suggested that Pat catch up with her. Pat responded by mentioning that he knows someone named King. Email Thread Body: hey sis i know a guy...he's known as king Pat	/img_tracy-p hone-2023-0 9-02.E01/vol _vol5/mobile/ Library/Mail/ Protected Index

			I just talked to Coral, she sounded ecstatic. She mentioned she just got some great news about her job. You should catch up with her. Tracy	
8	7/6/2012 15:49:31	F: patsumtwelve@gmail.com T: throne1966@hotmail.com Cc:coralbluetwo@hotmail.com Subject: can't pass up	<p>Pat emails King, carbon copying Tracy to the email, stating that he has a lucrative proposition: a heist at the National Gallery. He also threatens King, warning that if he does not comply, he will jeopardize King's parole.</p> <p>Email Body: Long time no see...I have a juicy proposition for you. Two weeks from now, me and my associates are planning a heist at the national gallery. Although, we need a helping hand. I know that you are on parole right now and are probably hesitant to participate. Me and your parole officer go years back. He is a very strict fellow. If he were to find out that you were dealing drugs and shooting dope in your veins every night, i feel he wouldn't be too happy. It's very easy for a person to phone the feds an anonymous tip that you are on drugs and the location of your stash. All </p>	/img_tracy-phone-2023-09-02.E01/vol5/mobile/Library/Mail/Protected Index
9	7/9/2012 14:44:11	F: tracysumtwelve@gmail.com T: coralbluetwo@hotmail.com Subject: things	<p>Email contained a compressed zip file called "documents.zip." Within the documents.zip file there are three Stamp Insurance Files. The insurance files disclose the value of the Stamps stolen.</p> <p>Attachments: Stamp Insurance 1:</p>	/mobile/Library/Mail/POP-coralbluetwo@hotmail.com@pop3.live.com/INBOX.mbox/x/Messages/ 8 A3BD06F-

CDB1-4453-
9C69-
77E06823F2
A E.emlx



NATIONAL GALLERY DC
WASHINGTON

Memorandum of Insurance Assurance:

TO: MyStamp Collections

In Regards to items owned or on loan to the National Gallery DC , Washington from MyStamp Collections from the period of May 12, 2012 to May 12, 2013, all items in aforementioned list are under the custody of National Gallery DC and therefore fiscal responsibility of said items is carried same. As per agreement between both parties the following items are covered by Awesome Inc. Policy x23654 for the following amounts under any circumstances leading to the degradation of items excepting normal wear of display.

Lot # 25. Armed Forces Reserve	\$43,000.00
Lot # 26. Stamp of Kazakstan2	\$29,000.00
Lot# 27. BradyCo.	\$12,000.00

Terms do not cover period of transport from or to the National Gallery.

Dm
President National G

Stamp Insurance 2:



NATIONAL GALLERY DC
WASHINGTON

Memorandum of Insurance Assurance:

TO: MyStamp Collections

In Regards to items owned or on loan to the National Gallery DC , Washington from MyStamp Collections from the period of May 12, 2012 to May 12, 2013, all items in aforementioned list are under the custody of National Gallery DC and therefore fiscal responsibility of said items is carried same. As per agreement between both parties the following items are covered by Awesome Inc. Policy x23654 for the following amounts under any circumstances leading to the degradation of items excepting normal wear of display.

Lot # 11. Woman's Profile	\$31,000.00
Lot # 12. Stamp of Kazakstan	\$29,000.00
Lot# 13. 1929 Napal	\$27,000.00

Terms do not cover period of transport from or to the National Gallery.

Dm
President National G

Stamp Insurance 3:

			 <p>NATIONAL GALLERY DC WASHINGTON</p> <p>Memorandum of Insurance Assurance:</p> <p>TO: MyStamp Collections</p> <p>In Regards to items owned or on loan to the National Gallery of Art, Washington from MyStamp Collections from the period of May 12, 2012 to May 12, 2013, all items in aforementioned in the custody of National Gallery DC and therefore fiscal responsibility of said items is carried same. As per agreement between both parties the following items are covered by Awesome Inc. Policy x23654 for the following amounts under any circumstances leading to the degradation of items excepting normal wear of display.</p> <table border="0"> <tr> <td>Lot # 1. Douglas MacArthur</td> <td>\$35,000.00</td> </tr> <tr> <td>Lot # 2. Nederland</td> <td>\$30,000.00</td> </tr> <tr> <td>Lot# 3. Mongolia</td> <td>\$24,000.00</td> </tr> </table> <p>Terms do not cover period of transport from or to the National Gallery.</p> <p style="text-align: right;"><i>Dm</i> President National G</p>	Lot # 1. Douglas MacArthur	\$35,000.00	Lot # 2. Nederland	\$30,000.00	Lot# 3. Mongolia	\$24,000.00	
Lot # 1. Douglas MacArthur	\$35,000.00									
Lot # 2. Nederland	\$30,000.00									
Lot# 3. Mongolia	\$24,000.00									
10	7/9/2012 18:18:47	F: carrysum2012@yahoo.com T: tracysumtwelve@gmail.com Subject: Re: Long time no see..	<p>Email Thread: Long time no see..</p> <p>Tracy thanked Carry for the lunch. Carry emails Tracy, requesting help to sneak in a tablet for a flash mob, this is supposedly so she can take photos of the flash mob. Carry suggests that Tracy would be compensated for her assistance.</p> <p>Email Thread Body: Hey I was wondering if there was any way you could help me get my tablet into the gallery. I know security isn't too keen on computers and the like in the gallery, but maybe you could pull some strings and get it in for me? I can make it worth your while :) But really I would happy to get lunch again or something else for your help. I want to get some pictures for my flash mob event I told you about. Let me know.</p> <p>Hey Carry, Just wanted to say thanks for lunch. I had a great time and it was good catching up with you. We should do lunch more often.</p>	/img_tracy-phone-2023-09-02.E01/vol5/mobile/Library/Mail/Protected Index						

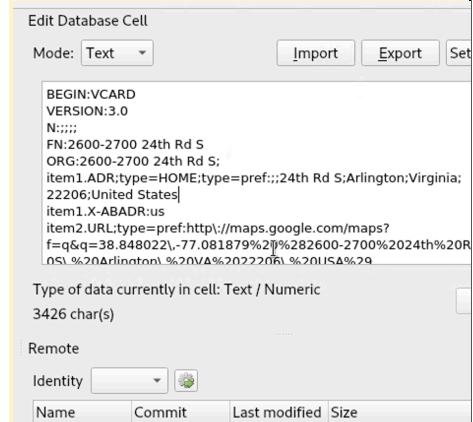
			<p>Hi, I saw on facebook that you were having a hard time lately, and i realized that we haven't spoken face to face in quite a while. I was really hoping that we could get together and have lunch. Does this Friday sound good? Let me know. -Carry</p>	
11	7/10/2012 13:48:40	F: carrysum2012@yahoo.com T: tracysumtwelve@gmail.com Subject: Re: Long time no see...	<p>Email Thread: Long time no see...</p> <p>Tracy agrees to help Carry sneak in the tablet and asks when Carry would like to come by to look around the gallery.</p> <p>Carry responds, expressing her gratitude and asking if she could come by at 9 AM tomorrow.</p> <p>Email Thread Body: Awesome this will be a big help. Can i come in tommorrow, around 9?</p> <p>Hey, I can definitely help get your tablet in. Our security guards can be pretty ridiculous sometimes! When would you want to get in and take a look around? Tracy</p>	/img_tracy-p hone-2023-0 9-02.E01/vol _vol5/mobile/ Library/Mail/ Protected Index
12	7/10/2012 15:24:57	F: patsumtwelve@gmail.com T: coralbluetwo@hotmail.com Subject: Fwd: can't pass up Attachment: needs.txt	<p>Email Thread: cant' pass up</p> <p>King agrees to help with the heist and sends a document listing the necessary equipment. The attached document is saved as a '.txt' file. Pat forwards this email to Tracy with the attachment named 'needs.txt'.</p> <p>Attachment: Needs.txt:</p>	/mobile/Libra r y/Mail/POP- coralbluetwo @hotmail.co m @pop3.live.c o m/INBOX.mb o x/Messages/ 9 F0508B8- 04FB-490E-

			<ul style="list-style-type: none"> -A rope and javelin (using alternative means to break) -tactical turtlenecks (what I will be wearing) -spray paint (for the cameras) -vibram five finger shoes (in order to walk silently) -pack of smokes (detecting lasers) -smoke grenades (use as a means of escape if caught) 	A7F0-3E23B0E7C5 9B.emlx
13	7/11/2012 17:06:19	F: carrysum2012@yahoo.com T: tracysumtwelve@gmail.com Subject: Re: Long time no see...	<p>Email Thread: Long time no see</p> <p>Tracy confirms the meeting at 9 a.m. tomorrow. Carry asks Tracy to provide her with information about security shift changes. She suggests that Tracy would be generously compensated for the information. Tracy agrees to provide the requested security shift information to Carry in exchange for payment but advises Carry to handle it with caution. Carry replies asking Tracy not to worry and says "It will be gun". (Later revealed to be a spelling error, where she intended to write fun.)</p> <p>Email Thread Body:</p> <p>Tracy: What do you mean by that? Carry: Don't. Worry so much. It will be gun Tracy: Okay carrie I'm going to send this but you need to make sure no one else sees it okay I could get in a bunch of trouble. I want to help you and I could really use some extra cash too but please please be careful. Carry: Hey so i'm putting together this event we talked about and I want to make it as painless as possible. I know that your security folk sometimes get a little out of sport. Is there a good time or maybe you could just let me know the shift changes so you don't have to know when I am going to do this. I have a pretty good budget for the even if you would like a little something for the info. Tracy: Yea sure, that sounds good see you tomorrow!</p>	/img_tracy-phone-2023-09-02.E01/vol5/mobile/Library/Mail/Protected Index

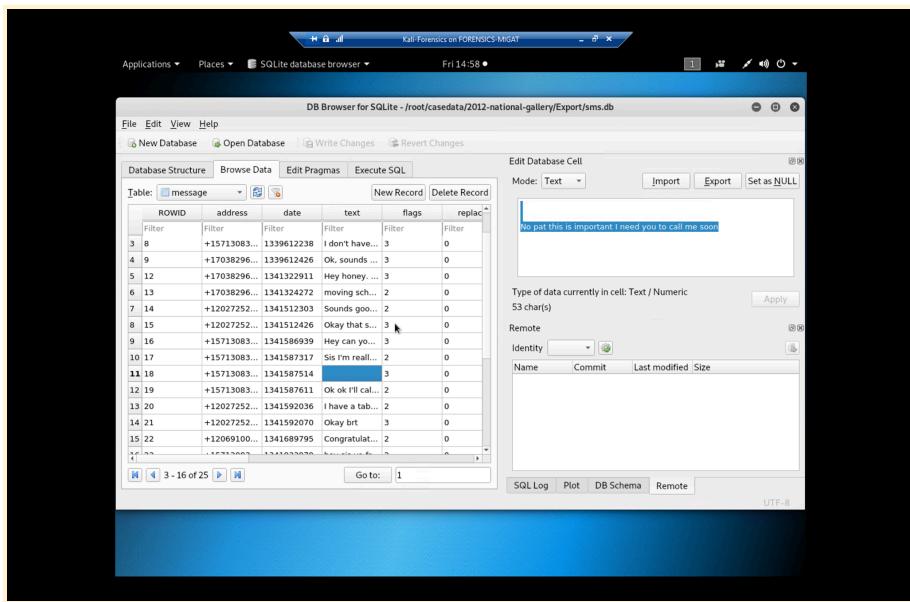
14	7/12/2012 16:12:07	F: "Carry Carsumtwotwelve (Google+)" <replyto-748d3d22@plus.google.com> T: tracysumtwelve@gmail.com Subject: Carry Carsumtwotwelve is sharing with you on Google+	Google+ notification alerting Tracy that Carry has shared an album .	/img_tracy-phone-2023-09-02.E01/vol_vo5/mobile/Library/Mail/Protected Index
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SMS Notes				
Artifact #	Time	Messaging Number	Messages	SMS
1	6/12/2012 21:25:04	F: Pat T: Tracy +15713083236 +1339536304	What are you up to this weekend? Pat asks Tracy about her plans for the weekend	SMS
2	6/13/2012 17:30:28	F: Terry T: Tracy +17038296071 +1339608628	I'm going out with dad after school for pizza! Thought I'd let you know if you planned to cook.	SMS
3	6/13/2012 18:30:38	F: Tracy T: Pat +15713083236 +1339612238	I don't have any big plans. How about you? Tracy replies to Pats message saying that she has no big plans and enquires about his plans.	SMS
4	6/13/2012 18:33:46	F: Tracy T: Terry +17038296071 +1339612426	Ok, sounds good.	SMS
5	7/3/2012 14:04:32	F: Terry T: Tracy +17038296071 +1341322911	Hey honey. I'm not sure if we can afford Prufrock anymore... What do you think about maybe switching to someplace else? moving schools at this point would be the worst! i would rather live with dad and stay at prufrock then	SMS

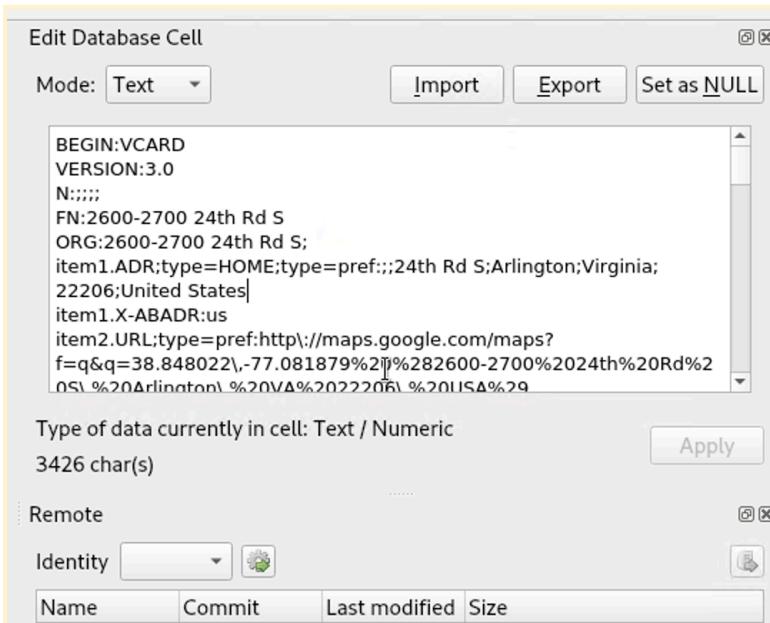
			change schools :(Terry replies back saying that she doesn't want to switch schools and would rather stay with her dad and continue at Prufrock	
6	7/5/2012 18:18:23	F: Carry T: Tracy +12027252124 +1341512303	Sounds good let's shoot for one at Bubba's grill Carry sets up the time and location as 1pm at Bubba's grill for meeting with Tracy **This meeting was just to catch up on life**	SMS
7	7/5/2012 18:20:26	F: Tracy T: Carry +12027252124 +1341512426	Okay that sounds great. See you there Tracy confirms the meeting time and location	SMS
8	7/6/2012 15:02:19	F: Tracy T: Pat +15713083236 +1341586939	Hey can you give me a call Tracy asks Pat to give her a call	SMS
9	7/6/2012 15:08:37	F: Pat T: Tracy +15713083236 +1341587317	Sis I'm really busy can we can do this later Pat says he is busy and suggests calling later	SMS
10	7/6/2012 15:11:54	F: Tracy T: Pat +15713083236 +1341587514	No pat this is important I need you to call me soon Tracy says its important and insists that pat call her soon	SMS
11	7/6/2012 15:13:31	F: Pat T: Tracy +15713083236 +1341587611	Ok ok I'll call in 5 Pat says he will call in 5 min	SMS
12	7/6/2012 15:18:50	F: Pat T: Tracy	Pat calls Tracy and they speak for 4 min 4 secs.	SMS
13	7/6/2012 16:27:16	F: Carry T: Tracy	I have a table inside	SMS

		+12027252124 +1341592036	Carry messages saying she has a table inside	
14	7/6/2012 16:27:50	F: Tracy T: Carry +12027252124 +1341592070	Okay brt Tracy replies back saying that she will be there.	SMS
15	7/10/2012 15:26:19	F: Pat T: Tracy +15713083236 +1341933979	hey sis yo friend coral got a email the attachment needs to be changed to pdf let her know Pat messages Tracy telling her about the email and informing that the attachment needs to be changed to pdf. He asks Tracy to tell this information to Coral.	SMS
16	7/10/2012 15:58:04	F: Tracy T: Pat +15713083236 +1341935884	Sure thing I'll get on it Tracy acknowledges the email and message.	SMS
17	7/10/2012 16:37:09	F: Tracy T: Pat *Failed +1341938229	Tracy tried to share the following location with Pat over MMS message but it failed. Location: 2600-2700 24th Rd S, Arlington, VA 22206 	SMS
18	7/10/2012 17:18:38	F: Tracy T: Terry +17038296071 +1341940718	Going to lunch. You want to go????! Tracy messages Terry for	SMS

			Lunch	
19	7/10/2012 18:19:24	F: Tracy T: Terry +17038296071 1341944364	Back at work Tracy messages Terry that she is back at work.	SMS
20	7/10/2012 18:58:24	F: Terry T: Tracy +17038296071 1341946704	I'm busy. Maybe this weekend if dad isn't busy Terry messages Tracy saying she is busy and suggests meeting up over the weekend if her dad isn't busy.	SMS
21	7/11 /2012 12:41:45	F: Carry T: Tracy +12027252124 1342010505	I'm almost there where should I meet you? Carry messages Tracy informing that she is almost there (National Gallery)	SMS
22	7/11/2012 12:49:08	F: Tracy T: Carry +12027252124 1342010948	Just meet me out front, I'll take the tablet in. Tracy replies to Carry asking her to meet out front. She says that she will take the tablet in.	SMS
23	7/13/2012 1:02:10	F: Terry T: Tracy +17038296071 1342141330	I really want to go to Dad's this weekend. He said he'll take me shopping for school	SMS



Sqlite browser to parse through SMS database



Failed message from Tracy to pat

Phone Call History

Master Timeline of NGDC				
Artifact #	Timestamp	Header Information	Key Information	Evidence Location
1	6/7/2012 15:18:50	From: Pat To: Tracy	244 seconds Call Between Pat and Tracy on the Day of Plan setup (between King, Pat and Tracy) (July 6) - Proof of Contact between 2 main suspects.	vol5/wireless/Library/Call History.db
2	6/12/2012 20:05:50	From: Unknown To: Tracy	Suspicious 20 seconds call from Unknown number: (650)8870260 On Relevant Day (June 12) - Possibly irrelevant for deep investigation	vol5/wireless/Library/Call History.db
3	6/12/2012 20:52:14	From: Unknown To: Tracy	Suspicious 56 seconds call from Unknown number: (703)38296191 On Relevant Day (June 12) -Possible relevant for deep investigation	vol5/wireless/Library/Call History.db

The screenshot shows the SQLite database browser interface. The title bar reads "SQLite database browser" and "Mon 12:06". The main window displays a table named "call" with the following data:

ROWID	address	date	duration	flags
1	6508870260	1339531490	20	4
2	7038296191	1339534334	56	4
3	+15713083236	1339604953	0	5
4	5712458517	1340386466	0	4
5	5713083236	1341587930	244	4

A modal dialog titled "Edit Database Cell" is open, showing the value "1341587930" in the "duration" field. The "Mode" dropdown is set to "Text".

Pat Call to Tracy - July 6 2012 (244 seconds)

The Current Epoch Unix Timestamp

Enter a Timestamp

Supports Unix timestamps in seconds,
milliseconds, microseconds and nanoseconds.

Convert →

1716825941

SECONDS SINCE JAN 01 1970. (UTC)

12:05:40 PM

Copy

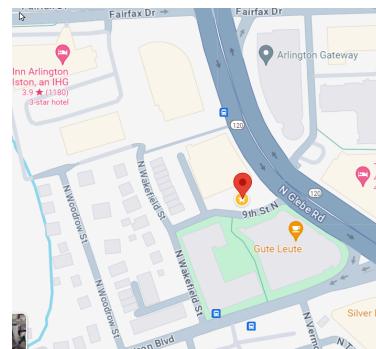
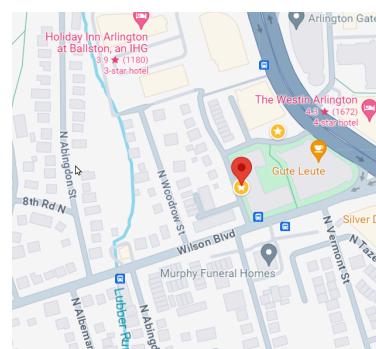
Format	Seconds
GMT	Fri Jul 06 2012 15:18:50 GMT+0000
Your Time Zone	Fri Jul 06 2012 11:18:50 GMT-0400 (Eastern Daylight Time)
Relative	12 years ago

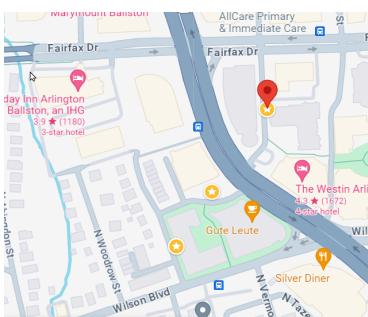
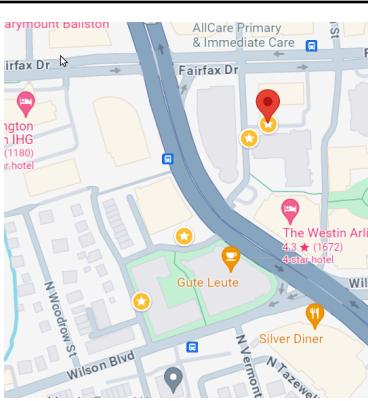
Unix TimeStamp conversion for Pat Call

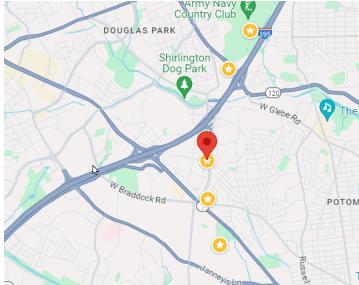
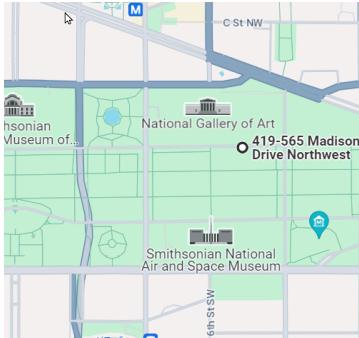
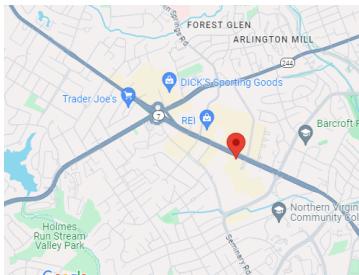
Appendix B: WiFi and GPS Location Information

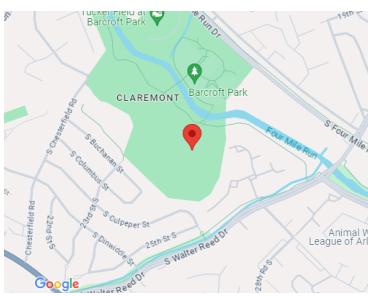
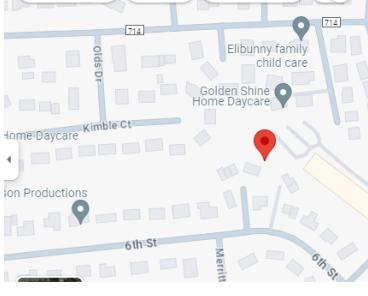
Location Information

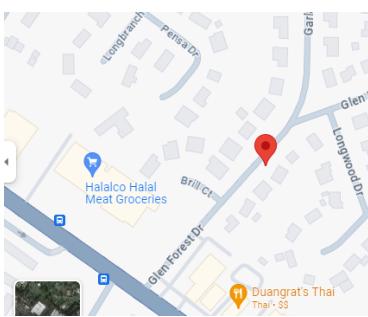
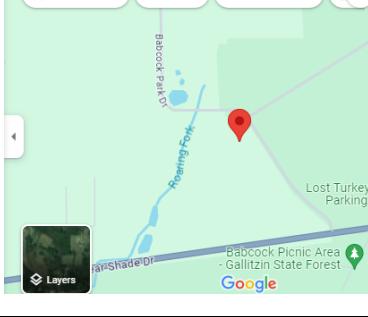
Group members: Niccolo Arboleda, Shanice Stewart, Andre Jesus, Aquib Ajeem, Malia Khan-Siddique, Darwin Hawezi, Kevin Dyal, Muhammad Shakeel, Amir Nehzat

	Location Information				
	Artifact #	Timestamp	Header Information	Body	Map Screenshot
	1	3.613068 82473715 E8	38.88055896 -77.11553561	In front of the Virginia Research Centre 900 N Glebe Rd, Arlington, VA 22203, USA	
	2	3.613068 82473715 E8	38.87996816 -77.11601394	801 N Wakefield Street	

	3	3.613070 43743548 E8	38.88143724 -77.11478394	901 N Vermont St, Arlington, VA 22201, USA	
	4	3.613070 43743548 E8	38.8815732 -77.11455619	4420 Fairfax Dr, Arlington, VA 22203, USA	
	5	3.613070 43743548 E8	38.88123995 -77.11389786	900 N Taylor St, Arlington, VA 22203, USA	
	6	3.630157 62683134 E8	38.88128513 -77.11626589	950 N Glebe Rd, Arlington, VA 22203, USA	

	7	3.636314 99997881 E8	38.83394575 -77.08578687	3371 S Stafford St, Arlington, VA 22206, USA	
	8	38.890541076 660156 -77.01887512 207031	419-565 Madison Dr NW, Washington, DC 20565, USA *Outside the National Art Gallery	419-565 Madison Dr NW, Washington, DC 20565, USA *Outside the National Art Gallery	
	9	38.843418121 33789 -77.10520935 058594	2499-2401 S Dinwiddie St, Arlington, VA 22206, USA	2499-2401 S Dinwiddie St, Arlington, VA 22206, USA	
	10	38.846351623 535156 -77.11991882 324219	Bailey's Crossroads, VA 22041, USA	Bailey's Crossroads, VA 22041, USA	
	11	38.871128082 27539 -77.11579132 080078	230 N Columbus St, Arlington, VA 22203, USA	230 N Columbus St, Arlington, VA 22203, USA	

	12		38.850151062 01172 -77.11087036 132812	S George Mason Dr, Arlington, VA 22204, USA	
	13		38.846649169 921875 -77.10209655 761719	4250 S Four Mile Run Dr, Arlington, VA 22206, USA	
	14		38.874164581 29883 -77.11656951 904297	N Carlin Springs Rd, Arlington, VA 22203, USA	
	15		38.860630035 40039 -77.12799835 205078	Glencarlyn, Arlington, VA 22204, USA	
	16		38.860454559 32617 -77.13049316 40625	5918 6th St, Falls Church, VA 22041, USA	

	17		38.854812622 07031 -77.13364410 40039	5857 Glen Forest Dr, Bailey's Crossroads, VA 22041, USA	
	18		40.130916595 458984 -78.76290130 615234	Shade Township, PA, USA	
	19		40.217948913 57422 -78.76070404 052734	Babcock Creek Rd, Windber, PA 15963, USA	
	20		40.219322204 589844 -78.76764245 606469	Ogle Township, PA, USA	
	21		40.234680175 78125 -78.76129150 390625	Windber, Pennsylvania, USA	