

SUDBURY BOARD OF SELECTMEN
TUESDAY JANUARY 23, 2018
7:30 PM, TOWN HALL - LOWER LEVEL

Item #	Time	Action	Item
	7:30 PM		CALL TO ORDER
			Opening remarks by Chairman
			Reports from Town Manager
			Reports from Selectmen
			Citizen's comments on items not on agenda
PUBLIC HEARING			
1.	7:45 PM	<i>VOTE</i>	Update on compliance with June 14, 2017 Notice of Decision and Order, re: Boomer the Dog, which was updated by vote of the Board of Selectmen on August 8, 2017. (Update from 9/12/17 meeting)
MISCELLANEOUS			
2.		<i>VOTE</i>	Discussion and vote whether to authorize the chairman to sign a letter addressed to Mass. Dept of Housing & Community Development to support the funding application requirements for the Coolidge at Sudbury Phase 2 project, located at 187 Boston Post Road. (Holly Grace, B'nai B'rith Housing, Senior Project Manager, to attend.)
3.			Town Manager Budget Presentation
4.			Discuss Town Meeting article on Loring Parsonage lease
5.			Discussion with L-S Superintendent Bella Wong regarding LS budget.
6.			Discussion of ATM Warrant Articles
7.		<i>VOTE</i>	Discuss and possible vote to approve proposed 2018 Board of Selectmen Newsletter Schedule of Deadlines.
8.			Capital Planning Discussion

These agenda items are those reasonably anticipated by the Chair which may be discussed at the meeting. Not all items listed may in fact be discussed and other items not listed may also be brought up for discussion to the extent permitted by law.

Item #	Time	Action	Item
9.			Discussion regarding GeoInsight Report on environmental conditions (cont. from 1/9 meeting)
10.			Discuss budget comparison options (cont. from 1/9 meeting)
11.			Citizen's Comments (cont)
12.			Discuss Upcoming Agenda Items
CONSENT CALENDAR			
13.		<i>VOTE</i>	Vote to approve award of contract by the Town Manager for designing, furnishing and installing enhanced and expanded direct digital control systems for the Goodnow Library HVAC systems to reduce energy consumption.
14.		<i>VOTE</i>	Vote to approve the regular session minutes of 12/19/17.

These agenda items are those reasonably anticipated by the Chair which may be discussed at the meeting. Not all items listed may in fact be discussed and other items not listed may also be brought up for discussion to the extent permitted by law.



SUDBURY BOARD OF SELECTMEN

Tuesday, January 23, 2018

1

PUBLIC HEARING

1: Dangerous Dog Hearing Update (continued from 9/12/17)

REQUESTOR SECTION

Date of request:

Requested by: Patty Golden

Formal Title: Update on compliance with June 14, 2017 Notice of Decision and Order, re: Boomer the Dog, which was updated by vote of the Board of Selectmen on August 8, 2017. (Update from 9/12/17 meeting)

Recommendations/Suggested Motion/Vote: Update on compliance with June 14, 2017 Notice of Decision and Order, re: Boomer the Dog, which was updated by vote of the Board of Selectmen on August 8, 2017. (Update from 9/12/17 meeting)

Background Information:
attached documents

Financial impact expected:N/A

Approximate agenda time requested: 30 minutes

Representative(s) expected to attend meeting:

Review:

Patty Golden	Pending
Melissa Murphy-Rodrigues	Pending
Barbara Saint Andre	Pending
Robert C. Haarde	Pending
Board of Selectmen	Pending

01/23/2018 7:30 PM

Golden, Patricia

From: Lisa Burke <lisasburke@yahoo.com>
Sent: Tuesday, October 24, 2017 1:45 PM
To: Golden, Patricia; ekrub15
Subject: Request to Modify June Order

Hi Patty,

I would like to request to modify the June order requesting we install a 6 total foot stockade fence (2 feet in the ground and 4 feet high) to a 7.5 total foot cedar wood post and heavy gauge wire fencing (2 feet in the ground and 5'6 feet high).

The installation was completed by a professional fencing company and was inspected by Officer Condon and Chief Nix. Both Nix and Condon believe the fence configuration, as installed, is a more secure enclosure than previously ordered by the board.

Additionally the fencing company did not recommend installing wood stockade fencing 2 feet in the ground as, in their opinion, the fencing would rot in one year. Therefore the only option was to install heavy gauge wire fencing in the ground.

Thank you,
Lisa

Sent from my iPhone

Attachment1.a: Burke_Email (2626 : Dangerous Dog Hearing Update (continued from 9/12/17))



Scott Nix
Chief of Police

Sudbury Police Department

Office of the Chief of Police

75 Hudson Road
Sudbury, MA 01776
Business (978) 443-1042
Fax (978) 443-1045
nixs@sudbury.ma.us

September 6, 2017

To: Melissa Rodrigues, Town Manager
From: Scott Nix, Chief of Police
RE: Dangerous Dog Hearing Supplemental Report – Boomer 39 Poplar Street

Melissa,

As requested by the Board of Selectmen, here is a summary of compliance regarding the aforementioned Dangerous Dog Hearing:

- ◆ I am scheduled to visit the residence at 39 Poplar Street upon Mrs. Burke's return on September 8, 2017. Findings, in addition to those listed below, will be reported to the Board of Selectmen during the meeting of September 12, 2017.
- ◆ A wrought iron gate been installed on the front entrance. ACO Condon visited the residence on 9-5-17 (see attached report) where she was greeted at the front door. From her vantage point she observed an interior gate further in the residence, on the second, floor preventing any of the dogs from gaining access to the front door as a secondary precaution to the wrought iron gate. I had previously verified the installation of the wrought iron gate while driving by the residence. I have had conversation with Mrs. Burke regarding other measures within the residence. I will very during my visit but on advice of counsel do not want pictures taken.
- ◆ A fence has been erected and inspected by the ACO on 9-5-17. The fence consists of a six foot wooden panel fence along the front portion of the property with a six foot post fencing with heavy gauge wire fencing attached thereto. The only concern with the construction of the fence was the vulnerability under the gate which needs additional measures to prevent digging under in the area. To be further inspected on the 8th.
- ◆ Certificate of insurance has been provided via email to the Town Manager and subsequently forwarded to me, Town Counsel and Selectmen Haarde (see attached).
- ◆ Microchip has been completed by Sudbury Animal Hospital on June 26, 2017 (see attached).
- ◆ Training has continued by their trainer, Daniel Titus, who is scheduled to be present during my visit. I will verify the continued training and he provided a letter dated 8-3-17

indicating the continued training to that point while explaining Boomer's progress (see attached).

- ◆ The letter of apology has not been provided on advice of counsel which was acknowledged by the Board of Selectmen.
- ◆ There have been no further reported incidents regarding the dog in question, "Boomer."
- ◆ The owner, son of the Burke's, has secured a lease whereby he will be moving out September 15th with Boomer relocating with him to Natick, MA. To be verified following the 15th while adding the same measures must be maintained if he is going to visit the residence at 39 Poplar Street. Information surrounding the hearing and stipulations established with be conveyed to the new jurisdiction upon confirmation of the move as ordered.

Respectfully,



Scott Nix
Chief of Police



Melissa Murphy-Rodrigues, Esq.
Town Manager

TOWN OF SUDBURY
Office of the Town Manager
www.sudbury.ma.us

278 Old Sudbury Road
Sudbury, MA 01776-1843
978-639-3381
Fax: 978-443-0756
Email: townmanager@sudbury.ma.us

June 14, 2017

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Ms. Lisa Burke
39 Poplar Street
Sudbury, MA 01776

**NOTICE OF DECISION AND ORDER
DANGEROUS DOG**

Dear Ms. Burke:

On Thursday, June 8, 2017, the Sudbury Board of Selectmen, held a public hearing in accordance with Massachusetts General Laws, Chapter 140, Section 157 to determine whether the dog owned and/or kept by you in the Town of Sudbury is a Nuisance Dog or Dangerous Dog as those terms are defined in said statute. The hearing was held based on complaints and reports that, on two separate occasions, your dog known as "Boomer" was not properly restrained and attacked an adult and a child without provocation.

Based on the credible evidence and sworn testimony provided at said hearing, the Board unanimously voted to declare that Boomer is a Dangerous Dog and it unanimously voted to impose the following conditions:

1. The dog shall be confined to the premises of the owner, which means that the dog shall be kept within the house and restrained so that it cannot escape at any time.
2. Within thirty days of entry of this Order, the owner shall install secondary doors or gates, acceptable to the Animal Control Officer, to ensure that the dog cannot escape at any time.
3. The dog shall not be permitted outside the house at any time unless it is humanely muzzled, which may include a basket-type muzzle. If the dog is outside the enclosure described below, it shall be on a leash having a minimum tensile strength of 300 pounds and not exceeding three feet in length and held by a responsible adult and it shall also be fitted with a shock collar controlled by the person walking the dog.



TOWN OF SUDBURY
Office of the Town Manager
www.sudbury.ma.us

278 Old Sudbury Road
 Sudbury, MA 01776-1843
 978-639-3381

Fax: 978-443-0756

Email: townmanager@sudbury.ma.us

Melissa Murphy-Rodrigues, Esq.
 Town Manager

4. The owner shall install at the property a six-foot high stockade fence, embedded in the ground for not less than two feet to serve as a secure enclosure for the dog. The plans and specifications for said enclosure shall be approved by the Animal Control Officer prior to installation. The enclosure shall be installed and approved by the Animal Control Officer within thirty days of entry of this Order.
5. Notwithstanding Paragraphs 1 and 3 of this Order, the dog may be permitted outside on the premises of the Owner only when enclosed within the fence described in Paragraph 4. In addition to being within the enclosure, the dog shall be muzzled and either fitted with a shock collar controlled by a nearby adult or trained to use the electric fence.
6. Within one week of entry of this order, the owner shall provide the Town Manager with proof of insurance in an amount not less than \$100,000 insuring the owner against any claim, loss, damage or injury to persons, domestic animals or property resulting from the acts, whether intentional or unintentional, of the dog.
7. The dog shall continue training with a professional trainer twice per week for one hour each session. Proof of training shall be provided to the Animal Control Officer on a weekly basis. Said training shall continue for four months or such longer period of time as may be recommended by the Animal Control Officer. Within four months of entry of this order, the dog shall be evaluated by the Animal Control Officer to determine whether further training is necessary.
8. Within seven days of entry of this order, the owner shall provide the Animal Control Officer with information from which the dog can be identified, to wit: microchip implantation.
9. The owner shall notify the Town Manager if the dog is going to be relocated to another residence, whether within or outside the Town. Prior to moving the dog to another jurisdiction, the Town Clerk and Animal Control Officer of that jurisdiction shall be notified of this Order.
10. Within seven days of entry of this Order, the owner shall provide a written apology to Sam Rocca.
11. If it is determined, after further public hearing, that there has been a violation of this Order or that the dog has bitten or attacked another person or domestic animal, the Board may order that the dog may be seized by the Animal Control Officer and euthanized.



TOWN OF SUDBURY
Office of the Town Manager
www.sudbury.ma.us

Melissa Murphy-Rodrigues, Esq.
Town Manager

278 Old Sudbury Road
Sudbury, MA 01776-1843
978-639-3381

Fax: 978-443-0756

Email: townmanager@sudbury.ma.us

If you are aggrieved by this decision, you may appeal to the District Court within ten (10) days of the date written above.

Very truly yours,

Melissa Rodrigues, Esq.
Town Manager

Nix, Scott

From: Boardmans Animal Control <jabbal@verizon.net>
Sent: Friday, July 21, 2017 12:57 PM
To: Nix, Scott
Subject: RE: Boomer

Hi Chief

Jennifer at 39 Poplar today, 6 foot fence is in process, not completed. Son has signed a lease on new residence, will be moving effective August 12th.

Jennifer intends on stopping by again early next week to obtain all specific information on where he is relocating to. Once we know, she will forward all related documents to the ACO in that town.

Thanks,
 Joyce for Jennifer

Jennifer A. Condon - Owner, Inspector/Officer State of Massachusetts Certified, Graduate of ACOAM Class of 2008
 Donna DeWallace - PT, Officer State of Massachusetts Certified, Graduate of ACOAM Class of 2010 Michael (Mike)
 Albanese - Officer State of Massachusetts Certified, Graduate of ACOAM Spring Class of 2016 Boardmans Animal Control Inc
 145-147 Parker Street
 Maynard, MA 01754
 Office: (978) 897-5596; PAGER: (508) 722-9659

-----Original Message-----

From: Nix, Scott [mailto:NixS@sudbury.ma.us]
 Sent: Thursday, July 20, 2017 5:57 AM
 To: Condon, Jennifer <jabbal@verizon.net>
 Subject: Re: Boomer

Great. Thank you.

Respectfully,

Scott Nix
 Chief of Police

----- Original message -----

From: Boardmans Animal Control <jabbal@verizon.net>
 Date: 7/19/17 16:54 (GMT-05:00)
 To: "Nix, Scott" <NixS@sudbury.ma.us>
 Subject: RE: Boomer

Attachment 1.b: Dangerous Dog Supplement for 9-12-17 (2626 : Dangerous Dog Hearing Update (continued from 9/12/17))

Hi Chief,

I am off tomorrow but will follow up first thing on Friday.

Thanks,

From: Nix, Scott [mailto:NixS@sudbury.ma.us]
Sent: Wednesday, July 19, 2017 3:41 PM
To: Condon, Jennifer <jabbal@verizon.net>
Subject: Boomer

Good afternoon,

Do you know if Boomer has moved as of yet? If not, could you follow up at your convenience to see where we stand?
Thank you!

Scott

Respectfully,

Scott Nix
Chief of Police
Sudbury Police Department
75 Hudson Road
Sudbury, MA 01776
(978) 443-1042
nixs@sudbury.ma.us<mailto:nixs@sudbury.ma.us>

Attachment1.b: Dangerous Dog Supplement for 9-12-17 (2626 : Dangerous Dog Hearing Update (continued from 9/12/17))

Nix, Scott

From: Boardmans Animal Control <jabbal@verizon.net>
Sent: Wednesday, September 6, 2017 12:24 PM
To: Nix, Scott
Subject: 39 POPLAR

I was at Burke residence at 39 Poplar yesterday, 9/5/17. Upon approach to front door they have installed a heavy duty rod iron gate. Mr. Burke answered door, both dogs were found to be secured on second floor by a gate. I walked the property with Mr. Burke, they have completed fencing (as modified by BOS). On the street side it is stockade fencing, on the down side of property and rear it is post fencing with heavy gauge wire fencing. I feel confident that this fence will secure the dog known as "Boomer". I indicated to Mr. Burke that I will required to meet with both his Son, and the dog "Boomer" prior to the Son moving from property, which is scheduled to occur on the 15th of this month. Mr. Burke informed me that everything is set up for the move. I will follow-up with the Burke's next week, prior to the departure date to obtain the location the Son and dog are moving to. Once I have this information, I will speak with the Animal Control Officer in the appropriate town, and forward Sudbury's hearing document for their records.

Regards,
 Jennifer

Jennifer A. Condon – Owner, Inspector/Officer
State of Massachusetts Certified, Graduate of ACOAM Class of 2008
 Donna DeWallace – PT, Officer
State of Massachusetts Certified, Graduate of ACOAM Class of 2010
 Michael (Mike) Albanese – Officer
State of Massachusetts Certified, Graduate of ACOAM Spring Class of 2016
[*Boardmans Animal Control Inc*](#)
 145-147 Parker Street
 Maynard, MA 01754
 Office: (978) 897-5596; PAGER: (508) 722-9659

Attachment 1.b: Dangerous Dog Supplement for 9-12-17 (2626 : Dangerous Dog Hearing Update (continued from 9/12/17))



Form 12

PLACE ACCOUNT STICKER HERE

Phone
number () -
Clinic/Shelter
code

ENTER



CHECK HERE

IMPORT

985 113 000 696 514

enrollment in the HomeAgain® pet safety and wellness network

PET/PRIMARY CONTACT INFORMATION

Pet Information

Pet name Boomer BurkeDog ☒ Cat ☐ Other GSD

Primary contact

First name SueLast name BurkeAddress 39 Poplar St

Apt.

City SwantonState MAZIP 01776E-mail SBurke376@aol.com

Phone 1 (508) 333 - 2016

Phone 2 () -

Ext.

I understand I will receive pet recovery, service-related communications. Please also send me: (check all that apply)

☐ Lost Pet Alert emails when a pet is lost in my area☐ Email newsletters with information about pet protection and safety

Alternate contact

First name

Last name

Phone 1 () -

Ext.

Phone 2 () -

Ext.

DO NOT SEND CASH. DEBIT CARDS ARE NOT ACCEPTED.

PAYMENT OPTIONS

HomeAgain® membership services are \$19.99 per year.*

VISA

M/C

AMEX

DISCOVER

Account #

-

-

-

Expiration date

mm

yy

Billing
address

Complete if address is different than above.

Apt.

City

State

ZIP

Check enclosed for annual membership fee

Make check payable to HomeAgain® and mail to: HomeAgain® P.O. Box 28153, Miami, FL 33102-8153

Enrollment paid
by clinicPromotion code
(if applicable)

Signature

Print name

Date

You understand that once charged, membership fees are non-refundable.

*Membership fees are subject to change.

IMPORTANT Please return this form to the HomeAgain® Pet Recovery Service or we will not be able to identify your pet if lost.To enroll, mail this form to HomeAgain, P.O. Box 28153, Miami, FL 33102-8153, visit www.homeagain.com or call 1-888-HOMEAGAIN (1-888-466-3242).

Make it even easier to identify your pet.
Save your lost pet a trip to the shelter to be scanned for a chip!

HomeAgain® offers
high quality collar tags
engraved with
your pet's name and
microchip ID number.

Additional styles
available at
HomeAgain.com.

See back to order by mail.

Round Tags

1 1/4" - up to 12 characters for name

N - Blue and Yellow Round: \$14

O - Pink Round: \$14



House Tags

1 1/4" - up to 10 characters for name

P - Nickel-Plated House: \$14

Q - Pink House: \$14

S - Gold-Plated House: \$14



Order Information

	Owner	Microchip #	Pet Name	Payment Status	Price
1.	Jack Burke	985113000696514	Boomer	To Be Invoiced	\$0.00
Grand Total:					\$0.00

OWNER'S NAME BURKE PET BOOMER 1A

DATE 1/7/15 (?) is gonads as healing from (?)
 positive neuter (large fluid on scrotum does not look active)
 - 3.0 cm x 1.0 cm completely dead left, + large volume
 Rx: Rimadyl 101 #10 B.S. x 5 AM/BS
 collected part of gave part of handout

12/28/15 Bite other dog scams while playing
 on 12/20/15

1/25/17 R(+) WT: 89.9
 1yr 50x 98 Grunted when walked in
 KH 226 ROUN

6/26/17 annual exam/snap40X WT: 92.9
 home again microchip

Heartworm +
 Lyme +
 Ehrlichiosis +
 Anaplasmosis +
 Date: 6/26/17 EX

985 113 000 696 514

- no VD/CIS. Normal app & energy. Mandated to wear muzzle.
 S. RAR - wearing E's mesh muzzle, all loose. Still grunting, but did well today.
 O EENT eyes clear, ears clear, N No oral exam. RIN normal. HR/CV: normal
 rate & rhythm, no murmurs. Lungs: clear. Abd Wb: soft, non-painful. MS 11: ambly.
 Integ. w/e.
 A. 4 y.o. NM 6.5D. (1) aggressive
 P. 4DX: 0/4
 Scanned for microchip, none found; placed Home Again Microchip Sp inter. &
 verified placement at scanner (21)

Titus Dog Training
102 Belcher Drive
Sudbury, MA 01776
(978) 697-0588

Boardmans Animal Control
147 Parker Street
Maynard, MA 01754

August 3, 2017

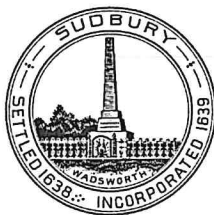
Dear Ms. Condon,

It has been my pleasure to work with Lisa Burke and Boomer of 39 Poplar Street, Sudbury, Massachusetts since April 18, 2017. Over that time period, I have held twelve private lessons with Lisa and Boomer. He is a wonderful animal with a lot of energy. Boomer has competed basic obedience and is continuing behavioral modifications, with which he is excelling. We have also been working on introducing Boomer to people coming on the property, mainly my wife, who has been kind enough to help out and has done this on many occasions. With each occasion, Boomer has shown improvement and is doing quite well. Over this time, Lisa has become a more confident owner and handler. She has signed up for ten more lessons and is very enthusiastic to have her dogs be the best they can be.

If you have any questions or concerns, please feel free to contact me at (978) 697 – 0588.

Thank you,

Daniel J Titus



Town of Sudbury

Office of Selectmen

Flynn Building
278 Old Sudbury Rd
Sudbury, MA 01776-1843
978-639-3381
Fax: 978-443-0756
selectmen@sudbury.ma.us

August 2, 2017

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Ms. Lisa Burke
39 Poplar Street
Sudbury, MA 01776

NOTICE OF HEARING TO REVIEW COMPLIANCE WITH ORDER TO RESTRAIN DANGEROUS DOG

Dear Ms. Burke:

On Tuesday, August 8, 2017, at 8:00 pm at the Sudbury Town Hall, the Sudbury Board of Selectmen, will hold a public hearing in accordance with Massachusetts General Laws, Chapter 140, Section 157 to determine whether you have complied with the terms of the Board's June 14, 2017 order to restrain the dangerous dog owned and/or kept by you in the Town of Sudbury, and/or to determine whether all or any portion of said order should be modified or withdrawn or if any additional conditions should be imposed.

You are invited to attend the hearing and at that time you may produce any documentation and/or witnesses which show that you have complied with the order. You may be represented by counsel at your own expense. You are also invited to make an appointment to examine the Board of Selectmen's file on this matter during regular business hours.

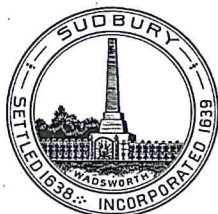
Please be advised that if you are found to have violated the Board's order you may be subject to financial penalties and/or further enforcement action by the Board. In addition, in accordance with G.L. c. 140, Section 157(h), you may be required to surrender the dog to the Town and be prohibited from owning another dog in the Commonwealth for a period of five years. Therefore, due to the serious consequences that may follow a finding that you violated the order of the Board of Selectmen, your prompt attention to this matter is strongly suggested.

If you have any questions in this regard, you may contact Town Manager, Melissa Rodrigues, at (978) 639-3381.

Very truly yours,

Leila S. Frank
Selectmen's Office

Attachment 1.c: Aug 2 Cert Hearing Notice Letter (2626 : Dangerous Dog Hearing Update (continued from 9/12/17))



TOWN OF SUDBURY
Office of the Town Manager
www.sudbury.ma.us

Melissa Murphy-Rodrigues, Esq.
 Town Manager

278 Old Sudbury Road
 Sudbury, MA 01776-1843
 978-639-3381
 Fax: 978-443-0756
 Email: townmanager@sudbury.ma.us

August 10, 2017

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Ms. Lisa Burke
 39 Poplar Street
 Sudbury, MA 01776

**NOTICE OF DECISION AND ORDER
 DANGEROUS DOG**

Dear Ms. Burke:

On Tuesday August 8, 2017, the Sudbury Board of Selectmen, held a public hearing in accordance with Massachusetts General Laws, Chapter 140, Section 157 to determine whether or not to amend the June 14 Order of Conditions concerning a dog kept by you in the Town of Sudbury, which was deemed a Nuisance Dog or Dangerous Dog as those terms are defined in said statute.

The Board voted to remove Condition Number 10, which read

Within seven days of entry of this Order, the owner shall provide a written apology to Sam Rocca.

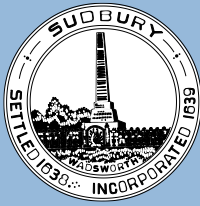
The other 10 conditions remain, and must be complied with. I have attached a copy of that order for your convenience.

Very truly yours,

Melissa Rodrigues, Esq.
 Town Manager

CC: Chief Nix
 Board of Selectmen

Attachment1.d: Aug_10_dog_ltr (2626 : Dangerous Dog Hearing Update (continued from 9/12/17))



SUDBURY BOARD OF SELECTMEN

Tuesday, January 23, 2018

MISCELLANEOUS (UNTIMED)**2: Coolidge Phase 2 Funding Application letter****REQUESTOR SECTION**

Date of request:

Requestor: Holly Grace, B'nai B'rith Housing, Senior Project Manager

Formal Title: Discussion and vote whether to authorize the chairman to sign a letter addressed to Mass. Dept of Housing & Community Development to support the funding application requirements for the Coolidge at Sudbury Phase 2 project, located at 187 Boston Post Road. (Holly Grace, B'nai B'rith Housing, Senior Project Manager, to attend.)

Recommendations/Suggested Motion/Vote: Discussion and vote whether to authorize the chairman to sign a letter addressed to Mass. Dept of Housing & Community Development to support the funding application requirements for the Coolidge at Sudbury Phase 2 project, located at 187 Boston Post Road. (Holly Grace, B'nai B'rith Housing, Senior Project Manager, to attend.)

Background Information:

The Department of Housing and Community Development released their Notice of Funding Availability (NOFA) last week related to the upcoming tax credit funding round. We are working on the application for the Coolidge Phase 2 and it is due in mid-February.

The NOFA requires a signature letter from the Selectmen to be included with the February application. The requirement reads, "Each application must be signed by the chief elected official of the community in which the project is located."

We respectfully request that the Selectmen provide a signature letter for our application. In an effort to be helpful, I've attached a draft Word letter to this email that would satisfy the requirement. Feel free to make edits. For reference, I have also attached the full NOFA document with the "chief elected official" language highlighted on pages 6 & 7.

Many thanks,
Holly Grace

Financial impact expected:

Approximate agenda time requested:

Representative(s) expected to attend meeting:

Review:

Patty Golden	Pending
Melissa Murphy-Rodrigues	Pending
Barbara Saint Andre	Pending
Robert C. Haarde	Pending

Board of Selectmen

Pending

01/23/2018 7:30 PM

Department of Housing and Community Development
Notice of Funding Availability
Winter 2018
Affordable Housing Competition for Rental Projects

The Department of Housing and Community Development (DHCD) is pleased to announce the start of the winter 2018 affordable housing competition for rental projects. The deadline for submitting applications to the winter 2018 competition will be February 15, 2018. On or before that date, DHCD will accept applications from sponsors whose projects were approved in December 2017 through the Department's pre-application process. Only projects with December 2017 pre-approvals will be considered during the winter 2018 competition. All applications to the winter 2018 competition must be submitted on-line using the Department's Mass OneStop+ web-based application. Each sponsor will be limited to no more than two project applications for available resources.

The February 2018 round is open to sponsors of multi-family rental projects of 20 units or more. Sponsors of projects smaller than 20 units are expected to apply to the Department's Community Scale Housing Initiative round in March 2018 or to the Department's next Supportive Housing round.

It is of great importance to the Baker Polito Administration to provide housing, not shelter, as a solution to homelessness. DHCD's resources are critically important to this effort. Consistent with the Administration's goal of eliminating homelessness in Massachusetts, DHCD -- through this NOFA and the winter 2018 competition -- will give priority in funding to projects that provide affordable housing for homeless families or individuals. In order to meet this priority, a sponsor must reserve at least 10% of the units in the project for homeless families or individuals earning less than 30% of area median income.

It is also of great importance to the Baker Polito Administration to promote the development of mixed-income housing with workforce and/or market rate units as well as affordable units. Sponsors who are interested in structuring mixed-income proposals should contact the Department's Division of Housing Development to discuss their projects.

The tax credit and subsidy resources available during the winter 2018 competition include the following:

- Federal Low Income Housing Tax Credits (LIHTC)
- Massachusetts State Low Income Housing Tax Credits
- HOME Investment Partnerships Program (HOME) monies in combination with Low Income Housing Tax Credits or as a funding source without tax credits
- Affordable Housing Trust Fund (AHTF) monies in combination with Low Income Housing Tax Credits or as a funding source without tax credits.
- Housing Stabilization and Investment Trust Fund (HSF) monies in combination with Low Income Housing Tax Credits or as a funding source without tax credits

- Capital Improvement & Preservation Trust Fund (CIPF) monies in combination with Low Income Housing Tax Credits or as a funding source without tax credits
- Housing Innovations Fund (HIF) monies as a funding source without Low Income Housing Tax Credits unless the sponsor intends to provide homeless units in conjunction with appropriate supportive services
- Facilities Consolidation Fund (FCF) monies in combination with Low Income Housing Tax Credits or as a funding source without tax credits. Although these monies are available on a rolling basis, developers also may submit applications for FCF during this funding round.
- Community-Based Housing (CBH) monies in combination with Low Income Housing Tax Credits or as a funding source without tax credits. The regulations and guidelines for this program are available on DHCD's website at: <http://www.mass.gov/hed/docs/dhcd/hd/cbh/proguidelines.pdf>
- Commercial Area Transit Node Housing Program (CATNHP/TOD) monies in combination with Low Income Housing Tax Credits or as a funding source without tax credits.

New Resource -- The Affordable Housing Preservation and Development Fund (AHPD):

In addition to the tax credit and subsidy resources listed above, DHCD is making available for the first time a new resource -- the Affordable Housing Preservation and Development Fund (AHPD). As approved by the U.S. Department of HUD, AHPD will be made available from part of DHCD's Moving to Work (MTW) authority as outlined in 2018-8 of the DHCD 2018 MTW plan. Through this NOFA, DHCD will make available up to \$4,000,000 of AHPD as non-performing loans in support of multi family rental units intended to serve households of two or more persons with household income below 30% of AMI. It is DHCD's expectation that interested sponsors will seek AHPD as a substitute source for other subsidy programs such as the Affordable Housing Trust Fund, HOME, the Housing Stabilization Fund, etc. In awarding AHPD funds, DHCD will give priority to production projects and experienced sponsors -- either non-profit or for-profit -- who intend to provide services to extremely low income (ELI) tenants in units supported by AHPD. For this new resource, DHCD has established a \$1 million limit per project. Sponsors should note that they may request up to \$100,000 per unit in total DHCD subsidy for their projects. The total subsidy amount per unit must include any request for AHPD.

Units supported by AHPD must meet Section 8 HQS standards throughout the term of the loan. Sponsors must follow HUD parameters and guidelines on local non-traditional activities as set forth in PIH 2011-45 (PIH Notices) including, but not limited to, Davis-Bacon wages, Fair Housing and Equal Opportunity statutes and regulation and Section 3.

Additional Information on DHCD Subsidy Programs:

The Department reserves the right to restrict the overall amount of funding committed during the winter 2018 competition, based on the availability of federal and state resources. All resources have been significantly oversubscribed in recent competitions. The Department expects demand to significantly exceed supply in the winter 2018 competition as well. In addition, developers should note that the final amount available for the federal HOME program administered by DHCD has not yet been established by Congress and the U. S. Department of HUD. Developers should further note that the state LIHTC is a particularly stressed resource at this time.

As long as their projects contain at least 20 units, developers seeking HOME, AHTF, HSF, CIPF, FCF, CBH, CATNHP/TOD, or AHPD funds may apply for these funds in combination with tax credits or as a funding source without tax credits. Developers seeking HIF may not apply for tax credits during this competition unless they intend to provide homeless units in conjunction with significant supportive services. The availability of state resources such as HSF, AHTF, CIPF, HIF, FCF, CBH, and CATNHP/TOD funds, provided from the proceeds of the Commonwealth's general obligation bonds, is at all times subject to decisions on the bond accounts made from time to time by the Secretary of Administration and Finance. Developers seeking HOME, HSF, CATNHP/TOD, or CIPF for projects located in HOME entitlement/consortium communities should note that a local contribution of funds is required. Local match also is required for federal or state tax credit projects. Further information is available from the Division of Housing Development at (617) 573-1300.

Applicants should contact Department staff to discuss the likely limits on all rental resources. DHCD has established \$100,000 as the subsidy limit per affordable unit for the winter 2018 rental round. It is the Department's expectation that sponsors will limit their request for DHCD funding subsidy to \$100,000 per affordable unit. Non-profit sponsors of projects that primarily or exclusively serve persons with disabilities, veterans, or homeless families or individuals should contact DHCD staff directly to discuss the subsidy limit for their projects.

Developers who intend to apply for tax credits and/or subsidy during the winter 2018 competition must simultaneously identify and apply for any other DHCD resources included in the financing package. DHCD will not accept applications for additional resources at a later date from sponsors applying for tax credits and/or subsidy during this competition. Interested sponsors should refer to the program restrictions and additional application requirements summarized on pages 4-11 of this NOFA.

Project-Based Assistance:

Some sponsors of rental projects may apply for an allocation of Section 8 project-based voucher assistance from DHCD, in accordance with all Section 8 project-based voucher regulations found at 24 CFR Part 983, published October 30, 2005, including revisions made effective July 25, 2014, and all DHCD PBV Administrative Plan requirements, as they may be amended from time to time, which can be found on DHCD's web page at:

<http://www.mass.gov/hed/docs/dhcd/ph/s8plans/sec8administrativeplan.pdf>

In addition, DHCD will make project-based assistance available to certain projects through the Massachusetts Rental Voucher Program (MRVP). Please refer to pages 9-10 of this NOFA.

Sponsors also are able to seek Section 811 PBVs in support of certain individuals with disabilities as certified by the Massachusetts Rehabilitation Commission. For further information on this resource, sponsors should contact Ayana Gonzalez at (617) 573-1305.

I. Pre-Application and Application Deadlines

The deadline for submission of pre-applications to the winter 2018 affordable housing competition for rental projects will be November 30, 2017. DHCD will accept no more than two pre-applications from each developer. All pre-applications must be received at the Department on or before that date. Pre-applications must be submitted using Mass OneStop+, DHCD's on-line financing application. The link to the application system is: <https://massonestopplus.intelligrants.com>. Sponsors should prepare pre-applications consistent with DHCD's stated priority for projects that include 10% of the total units reserved for homeless families or individuals.

The deadline for submission of all applications to the winter 2018 affordable housing competition for rental projects will be February 15, 2018. All applications must be received at the Department on or before that date. Sponsors may submit applications in February 2018 only if the Department approves their pre-applications in December 2017. Developers should note that DHCD will limit state LIHTC requests to one request per developer.

All applications must be submitted using Mass OneStop+, DHCD's on-line financing application. As indicated, the link to the application system is: <https://massonestopplus.intelligrants.com>. Applicants must also submit to DHCD one original hard copy of the Mass OneStop+ on-line application, including 11 x 17 plans, by close of business on February 16, 2018. Applications submitted after the deadlines of February 15, 2018, for online submissions and February 16, 2018, for hard copy submissions will not be accepted by DHCD.

Application materials must be delivered to:

Department of Housing and Community Development
Division of Housing Development
100 Cambridge Street, Suite 300
Boston, MA 02114
Attn: Bertha Borin

II. Eligible Applicants

Each of the funding resources available during the winter 2018 competition, with the exception of the new AHPD, has guidelines and/or regulations describing eligible applicants. In general, eligible applicants are as follows:

- LIHTC (federal and state): for-profit or non-profit developers
- HOME: for profit or non-profit developers, or municipalities in partnership with for-profit or non-profit developers
- AHTF: for profit or non-profit developers
- HSF: for profit or non-profit developers, or municipalities in partnership with for-profit or non-profit developers
- CIPF: for-profit or non-profit developers
- HIF: non-profit developers
- FCF: non-profit or for-profit developers
- CBH: non-profit or for-profit developers
- CATNHP/TOD: for-profit or non-profit developers, or municipalities in partnership with for-profit or non-profit developers
- AHPD: for profit or non-profit developers

For additional information on eligible applicants for each resource, please contact the Division of Housing Development staff at (617) 573-1300.

III. Specific Program Guidelines for the Winter 2018 Competition

DHCD has stated in this NOFA that it will give priority for projects that will produce or preserve at least 10% of the total units for homeless families or individuals. DHCD also is encouraging the development of mixed-income projects. Certain guidelines and/or regulations exist for each funding resource available during DHCD's winter 2018 competition, with the exception of the new AHPD. Sponsors should review the current program-specific guidelines and/or regulations before preparing their funding applications. Sponsors who intend to prepare applications for tax credits in combination with other DHCD resources should take note of the following specific program standards:

- *Federal Low Income Housing Tax Credits:* Please refer to the Tax Credit Qualified Allocation Plan (QAP) as posted to the LIHTC page of DHCD's website at: <http://www.mass.gov/hed/housing/affordable-rent/low-income-housing-tax-credit-lihtc.html>

The 2017 QAP is posted to DHCD's website and will remain posted until the 2018 QAP is in effect. The draft 2018 QAP, with few changes from the 2017 QAP, will be posted shortly.

Please note that all 9% credit project sponsors should assume that the applicable percentage for the rehabilitation credit (also known as the 70% Present Value Credit) will be fixed at 9%.

- *Massachusetts State Low Income Housing Tax Credits:* Please refer to the 2017 QAP, as posted to DHCD's website. In addition, please note that demand for the state low-income housing tax credit has increased dramatically during the most recent rental competitions. DHCD anticipates that demand will remain strong during 2018. Sponsors of projects seeking state LIHTC during the winter 2018 competition should note the following limitations:
 - \$ 400,000 for projects with 40 or fewer units
 - \$ 700,000 for projects with 41 to 60 units
 - \$1,000,000 for projects with 61-99 units
 - \$1,500,000 for projects with 100 or more units

DHCD also strongly encourages all sponsors to limit state credit requests to \$10,000 to \$12,000 per unit.

At this time, DHCD intends to deny any pre-application from sponsors of projects seeking in excess of \$1.5 million in state LIHTC. On a case-by-case basis, the Department may permit applications for higher state LIHTC requests. However, DHCD is likely to entertain such requests only for certain very large-scale and/or major-impact projects. Sponsors should contact Department staff to discuss such requests.

- *HOME Investment Partnerships Program:* In general, \$750,000 to \$1,000,000 is the maximum amount available per project; \$50,000 to \$75,000 is the maximum amount available per affordable unit in HOME entitlement/consortium communities. In non-entitlement or non-consortium communities, the maximum amount available per affordable unit is \$65,000 to \$90,000. Applications for projects located in municipalities that receive HOME funds directly from HUD must include matching funds (i.e., HOME, CDBG) as a funding source for the project. **Each application must be signed by the chief elected official of the community in which the project is located.** All sponsors should note that the recent HOME program reductions at the federal level --approximately 50% less for Massachusetts as compared to 2011 -- continue to affect the number of HOME awards the Department can make. Applicants also should note current HUD HOME requirements referenced in the HOME Final Rule, as updated July 24, 2013. Projects seeking HOME funds must undergo the HUD environmental review process, which includes notice to the State Historic Preservation Office and the Tribal Preservation Office. Sponsors of potential HOME projects must not undertake any choice limiting actions, as defined by HUD, until the HUD

environmental review is complete. Eligible HOME Community Housing Development Organizations (CHDOs) with potential HOME CHDO projects are strongly encouraged to apply for funds.

- *Affordable Housing Trust Fund:* In general, \$1,000,000 is the maximum available per project; \$50,000 is the maximum amount available per affordable unit. The level and type of assistance provided by AHTF to a project must be the minimum amount necessary to achieve the desired degree of affordability.
- *Housing Stabilization Fund monies:* In general, \$750,000 to \$1,000,000 is the maximum amount available per project; \$50,000 is the maximum amount available per affordable unit in HOME entitlement/consortium communities. In non-entitlement or non-consortium communities, the maximum amount available per affordable unit is \$65,000. Each application must be signed by the chief elected official of the community in which the project is located. Applications for projects located in municipalities that receive HOME funds directly from HUD must include matching funds as a funding source for the project.
- *Capital Improvement and Preservation Fund:* CIPF is intended to help preserve and improve projects where the prepayment of a state or federally-assisted mortgage would lead or has led to the termination of a use agreement for low income housing. CIPF funds are subject to the bond expenditure cap established for DHCD by the Executive Office of Administration and Finance. The maximum amount of CIPF available per project is \$40,000 per unit for projects with more than 25 units with a typical per project maximum of \$2,000,000. The maximum amount of CIPF available per project is \$50,000 per unit for projects with 25 units or less with a typical per project maximum of \$1,250,000. Sponsors also must obtain a commitment of funds from the community in which the project is located. Interested parties should contact the Division of Housing Development staff to obtain more information.
- *Housing Innovations Fund:* \$500,000 is the maximum amount of HIF typically available to a project. \$750,000 to \$1,000,000 is the maximum amount of HIF typically available to a project that primarily or exclusively serves homeless individuals or families. Sponsors also should note that HIF, by statute, can support no more than 50% of the total development cost per HIF unit.
- *Facilities Consolidation Fund:* In accordance with statute, requests for FCF may not exceed 50% of the total development cost of the project (or of the total development cost of eligible units in a larger project). Please note that FCF funds are only available to projects or units within larger projects available for the exclusive use of the Departments of Mental Health or Developmental Services. Sponsors must include in the Mass OneStop+ application a certification from the central office of DMH or DDS that the project is part of the Facilities Consolidation Plan.

- *Community Based Housing:* A request for CBH funding for a project may not exceed the lesser of: 1) \$750,000; or 2) 50% of total development costs (or of the total development cost of eligible units in a larger project). Sponsors of projects seeking CBH funds must include in their applications a letter of support for the project and for the population to be served from the Massachusetts Rehabilitation Commission.
- *Commercial Area Transit Node Housing Program:* \$50,000 per affordable unit is the CATNHP/TOD maximum. \$750,000 to \$1,000,000 typically is the per project maximum for CATNHP/TOD. Each sponsor may submit only one request for CATNHP/TOD funding, and no more than one application will be accepted from a given community in a funding round. Projects must be located in proximity to transit, defined as “within .25 (1/4) miles of an existing Transit Station or Planned Transit Station”.
- *Affordable Housing Preservation and Development Fund:* Interested developers should review the description of this new resource on page 2 of this NOFA. DHCD will provide this new resource in the form of non-performing loans closed through the MassDocs process. The loans will carry minimum 30-year terms. The funds are intended to support the production or preservation of rental units for households with two or more persons with household income below 30% of AMI. AHPD funds will carry deed restrictions or legally-binding covenants to ensure long-term affordability. DHCD anticipates restricting the per-project amount of AHPD to \$1,000,000. The funds are intended to replace, not augment, other DHCD subsidy funds described in this NOFA.
- *Section 8 Project-Based Voucher (PBV) Assistance:* A maximum of 100 Section 8 PBV vouchers will be made available as part of this funding round. Successful applicants must be approved for at least one other available source of funding from a DHCD funding round in order to be eligible for PBV assistance. Projects located within the City of Boston may apply for PBV vouchers if the project has set aside 20% or more of its units for homeless families, and will use the PBV voucher on some or all of such set-aside units. In addition, City of Boston projects funded with Community Based Housing (CBH) or Facilities Consolidation Funds (FCF) may apply for PBV vouchers (maximum of 12 PBVs per funding round). DHCD expects these PBV vouchers to be available in fall 2017. All PBV voucher reservations are subject to available funding from HUD and DHCD. PBV contract authority can be requested for up to 15 years, with the option to renew. PBV funds will be used to pay the owner a portion of the monthly rent on behalf of eligible households whose incomes must generally be at or below 30% of the area median income (AMI), and in no case can exceed 50% of AMI. No demolition or construction can begin until an Agreement to enter into a Housing Assistance Payments (AHAP) contract is signed; therefore, projects that are already in construction cannot receive PBV assistance. Prior to AHAP: 1) a subsidy layering review for projects with any form of federal, state or local housing assistance, including tax credits and tax concessions, must be approved by HUD or a HUD

designated agency; and 2) an environmental review performed in accordance with 24 CFR 58 must also be completed and approved by HUD.

Unit and Project Size Requirement:

- 1) Family units of 2 or more bedrooms;
- 2) A limit of the lesser of 8 PBVs per project, or 25% of the total project units as PBVs;
- 3) All PBV units must have a private bath; and
- 4) PBV units cannot be used in group residences or shared housing arrangements.

At the discretion of DHCD, up to 20 of the 100 PBVs may be awarded to units not meeting these criteria. DHCD reserves the right to limit the number of vouchers awarded to each project.

Owners will be responsible for maintaining a PBV waiting list and selecting tenants in accordance with a DHCD-approved tenant selection plan.

Sponsors must agree to comply with all Section 8 project-based voucher regulations found at 24 CFR Part 983, published October 30, 2005, including all revisions made effective July 25, 2014 (published 6/25/2007), and all requirements of the Housing Opportunity Through Modernization Act of 2016 (81 F.R. 73030) and subsequent regulations. Sponsors also must agree to comply with all DHCD PBV Administrative Plan requirements, as they may be amended from time to time, which can be found on DHCD's web page at:

<http://www.mass.gov/hed/docs/dhcd/ph/s8plans/sec8administrativeplan.pdf>

Interested sponsors should immediately contact both the Division of Housing Development at (617) 573-1300 and the Bureau of Rental Assistance at (617) 573-1217 for further information about the Section 8 project-based option and how to structure the development and operating pro formas which must be submitted as part of the Mass OneStop+ application due on February 15, 2018.

Massachusetts Rental Voucher Program (MRVP), Project Based Voucher (PBV) Assistance: A maximum of 100 MRVP PBVs will be made available as part of this funding round. Successful applicants must be approved for at least one other available source of DHCD funding in the winter rental round in order to be eligible for MRVP PBV assistance. MRVP is a state-funded program and is not part of DHCD's federal Section 8 PBV program. MRVP has separate regulations and guidelines to which developers must adhere. Owners will be responsible for maintaining a PBV waiting list in coordination with the Administering Agency and selecting tenants in accordance with a DHCD-approved tenant selection plan.

DHCD expects the MRVP PBVs to be available in spring 2019. All PBV reservations are subject to available funding from DHCD. PBV contract authority can be requested for up to 15 years, with the option to renew. PBV funds will be used to pay the owner a portion of the monthly rent on behalf of eligible households whose incomes must be at or below

50% of AMI. The contract rent for these units will be set at the lesser of 60% of AMI rents or FMR. No demolition or construction can begin until a pre-leasing agreement contract is signed; therefore, projects that already are in construction cannot receive PBV assistance.

Unit and Project Size Requirement:

- 1) Family units of 2 or more bedrooms;
- 2) A limit of the lesser of 8 PBVs per project, or 25% of the total project units as PBVs;
- 3) All PBV units must have a private bath; and
- 4) PBV units can be used in group residence or shared housing arrangements, although private baths are required.

At the discretion of DHCD, up to 20 of the 100 PBVs may be awarded to units not meeting these criteria. DHCD reserves the right to limit the number of vouchers awarded to each project.

Owners will be responsible for maintaining a PBV waitlist and selecting tenants in accordance with a DHCD-approved tenant section plan.

Sponsors must agree to comply with all MRVP PBV regulations found at:

<http://www.mass.gov/hed/economic/eohed/dhcd/legal/regs/>

Interested sponsors should immediately contact both the Division of Housing Development at (617) 573-1300 and the Bureau of Rental Assistance at (617) 573-1141 for further information about the MRVP program.

IV. Competitive Evaluation Criteria:

All applications will be evaluated first to determine that at least 10% of the units in the project will be reserved for homeless families or individuals. All applications also will be evaluated according to criteria that apply to DHCD programs from which funding is sought. The Commonwealth's commitment to the principles of sustainable development is reflected in the Division's programs and policies. Sponsors should note that consistency with the Commonwealth's Sustainable Development Principles is a threshold requirement for all projects. Sponsors applying for resources other than tax credits also must provide market study information, as well as Appendices I and J of the QAP. The specific criteria for tax credit applications are set forth in the Department's Qualified Allocation Plan as posted on DHCD's website at:

<http://www.mass.gov/hed/housing/affordable-rent/low-income-housing-tax-credit-lihtc.html>

In general, the evaluation criteria for all applications include, but are not limited to, the following:

- percentage of units to be reserved for homeless families or individuals (10% minimum)
- strength of overall concept
- strength of development team
- total request for state subsidy (exclusive of tax credits) (subsidy requests should not exceed \$100,000/unit)

- evidence of market feasibility
- evidence of satisfactory progress on projects previously funded with DHCD resources
- demonstrated need for project in the target neighborhood
- appropriate design for the project that promotes green building standards and increased accessibility
- provision of units for individuals or households earning less than 30% of AMI, including those making a transition from homelessness
- provision of units for persons with disabilities
- appropriate scope of construction for the project
- appropriate total development costs for properties included in proposal
- financial viability of the project
- degree of local support, including local funding commitments
- evidence of readiness to proceed
- degree to which the project maximizes sustainable development principles

It is important to note that sponsors of applications to the winter 2018 rental competition must be in good standing with DHCD with respect to any and all other affordable housing projects, supported by DHCD resources, with which they are involved. DHCD may elect not to review applications from sponsors who are not in good standing with the Department with respect to other projects.

Please refer to page 12 of this NOFA for application requirements. Please contact DHCD's Division of Housing Development at (617) 573-1300 with any questions related to the winter 2018 affordable housing competition for rental projects.

V. Performance Measurement and Fair Housing Data Collection:

Applicants seeking DHCD funds should note the following: If they receive funding, they must comply with HUD-approved performance measurement standards and data collection requirements and with Commonwealth of Massachusetts fair housing data collection requirements. Please refer to Attachment A for Massachusetts' Fair Housing Mission Statement and Principles.

**Application Requirements
Winter 2018
Affordable Housing Competition for Rental Projects**

VI. Application Requirements

All applications must be submitted on-line at <https://massonestopplus.intelligrants.com>, using the Mass OneStop+ application. All online applications must be submitted on or before the close of business on February 15, 2018. Sponsors who need assistance in signing up for training or logging in should contact Bertha Borin at DHCD at 617-573-1309. In addition to on-line submission, one original hard copy of the Mass OneStop+ application, including 11 x 17 plans, must be submitted (in a three-ringed binder and tabbed by section) to DHCD, Division of Housing Development, 100 Cambridge Street, Suite 300, Boston, MA 02114, no later than the close of business on February 16, 2018.

VII. Pre-Application and Application Fees

Pre-application fees are due from all applicants who submit pre-applications by close of business on November 30, 2017. The pre-application fee is \$1,000 for each project sponsored by a for-profit and \$500 for each project sponsored by a non-profit. Pre-application fees are non-refundable. Please note that sponsors are limited to no more than two pre-applications.

Application fees for the winter 2018 rental round are due with Mass OneStop+ submissions for several of the funding resources currently available. The fee schedules for the funding resources are as follows:

Low Income Housing Tax Credits only:

All tax credit applicants must pay a portion of the tax credit fee when the application is submitted to DHCD. This fee is non-refundable. Application fee checks for tax credit projects should be made payable to the Department of Housing and Community Development. The fees due with the application submission are as follows:

Projects sponsored by non-profits:	\$1,050
Projects containing 20 units or fewer	\$1,050
All other projects	\$5,250

Low Income Housing Tax Credits in combination with other DHCD resources:

The only application fees due are the tax credit application fees listed above. No additional fees are due.

HOME, HSF, CATNHP/TOD, or CIPF funds as a source exclusive of tax credits:

Applicants seeking HOME, HSF, CATNHP/TOD or CIPF funds, but not tax credits, must pay an application fee at the time of submission. The fee is non-refundable. Checks should be made payable to the Massachusetts Housing Partnership Fund. The fees are as follows:

Projects sponsored by non-profits	\$ 450
Projects sponsored by for-profits	\$1,250

HIF, FCF, or CBH as a source exclusive of tax credits:

No application fee is required.

Attachment A

Massachusetts Fair Housing Mission Statement and Principles

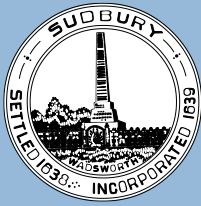
The mission of DHCD through its programs and partnerships is to be a leader in creating housing choice and providing opportunities for inclusive patterns of housing occupancy to all residents of the Commonwealth, regardless of income, race, religious creed, color, national origin, sex, sexual orientation, age, ancestry, familial status, veteran status, or physical or mental impairment.

It shall be our objective to ensure that new and ongoing programs and policies affirmatively advance fair housing, promote equity, and maximize choice. In order to achieve our objective, we shall be guided by the following principles:

1. **Encourage Equity.** Support public and private housing and community investment proposals that promote equality and opportunity for all residents of the Commonwealth. Increase diversity and bridge differences among residents regardless of race, disability, social, economic, educational, or cultural background, and provide integrated social, educational, and recreational experiences.
2. **Be Affirmative.** Direct resources to promote the goals of fair housing. Educate all housing partners of their responsibilities under the law and how to meet this important state and federal mandate.
3. **Promote Housing Choice.** Create quality affordable housing opportunities that are geographically and architecturally accessible to all residents of the commonwealth. Establish policies and mechanisms to ensure fair housing practices in all aspects of marketing.
4. **Enhance Mobility.** Enable all residents to make informed choices about the range of communities in which to live. Target high-poverty areas and provide information and assistance to residents with respect to availability of affordable homeownership and rental opportunities throughout Massachusetts and how to access them.
5. **Promote Greater Opportunity.** Utilize resources to stimulate private investment that will create diverse communities that are positive, desirable destinations. Foster neighborhoods that will improve the quality of life for existing residents. Make each community a place where any resident could choose to live, regardless of income.
6. **Reduce Concentrations of Poverty.** Ensure an equitable geographic distribution of housing and community development resources. Coordinate allocation of housing resources with employment opportunities, as well as availability of public transportation and services.
7. **Preserve and Produce Affordable Housing Choices.** Encourage and support rehabilitation of existing affordable housing while ensuring that investment in new housing promotes diversity, and economic, educational, and social opportunity. Make housing

preservation and production investments that will create a path to social and economic mobility.

8. **Balance Housing Needs.** Coordinate the allocation of resources to address local and regional housing need, as identified by state and community stakeholders. Ensure that affordable housing preservation and production initiatives and investment of other housing resources promote diversity and social equity and improve neighborhoods while limiting displacement of current residents.
9. **Measure Outcomes.** Collect and analyze data on households throughout the housing delivery system, including the number of applicants and households served. Utilize data to assess the fair housing impact of housing policies and their effect over time, and to guide future housing development policies.
10. **Rigorously Enforce All Fair Housing and Anti-Discrimination Laws and Policies.** Direct resources only to projects that adhere to the spirit, intent, and letter of applicable fair housing laws, civil rights laws, disability laws, and architectural accessibility laws. Ensure that policies allow resources to be invested only in projects that are wholly compliant with such laws.



MISCELLANEOUS (UNTIMED)
3: Town Manager Budget Presentation

REQUESTOR SECTION

Date of request:

Requested by: Patty Golden

Formal Title: Town Manager Budget Presentation

Recommendations/Suggested Motion/Vote:

Background Information:

Financial impact expected:

Approximate agenda time requested:

Representative(s) expected to attend meeting:

Review:

Patty Golden	Pending
Melissa Murphy-Rodrigues	Pending
Barbara Saint Andre	Pending
Robert C. Haarde	Pending
Board of Selectmen	Pending

01/23/2018 7:30 PM



Town Budget Presentation
Fiscal Year 2019

1

GFOA BUDGET

- Proud to submit a budget document that meets the requirements for the Distinguished Budget Presentation Award granted by the Government Finance Officers' Associations
- This is a transparent, easy to understand budget document, that includes not only a recommended budget, but also information about town government, budget procedures and policies, goals and forecasting information

2

TOWN MANAGER'S BUDGET

The Town is presenting a balanced budget, within capacity, as determined by our forecasting exercises and additional information learned since then.

	FY17	FY18	FY19	Percentage
REVENUES & AVAILABLE FUNDS	Actual	Budgeted	Recommended	Increase
Real Estate and Personal Property Taxes	79,658,616	82,585,988	85,640,816	3.70%
Intergovernmental Revenue	7,543,389	7,734,905	7,807,343	0.94%
Local Receipts	6,085,162	4,625,001	4,836,800	4.58%
Other Available	641,912	659,912	660,000	0.01%
Free Cash	-	282,359	392,996	39.18%
TOTAL:	93,929,079	95,888,165	99,337,955	3.60%

3

FY19 BUDGET

	FY18	FY19	Percentage
EXPENDITURES	Budgeted	Recommended	Increase
Education - Sudbury Public Schools (SPS)	36,156,047	37,459,173	3.60%
Education - LS Regional High School (LS)	23,698,762	24,762,716	4.49%
Education - Vocational	754,226	663,719	-12.00%
General Government	2,923,759	3,087,783	5.61%
Public Safety	8,156,104	8,581,159	5.21%
Public Works	5,358,109	5,292,995	-1.22%
Human Services	732,771	792,406	8.14%
Culture & Recreation	1,305,443	1,367,678	4.77%
Town-Wide Operating and Transfers	662,550	536,963	-18.96%
Employee Benefits (Town and SPS)	11,803,118	12,331,171	4.47%
OPEB Trust Contribution (Town and SPS)	471,036	540,249	14.69%
Total Town Departments	92,021,925	95,416,012	3.69%
Town Debt Service	3,453,050	3,100,625	-10.21%
Operating Capital Budget	413,190	821,318	98.77%
TOTAL:	95,888,165	99,337,955	3.60%

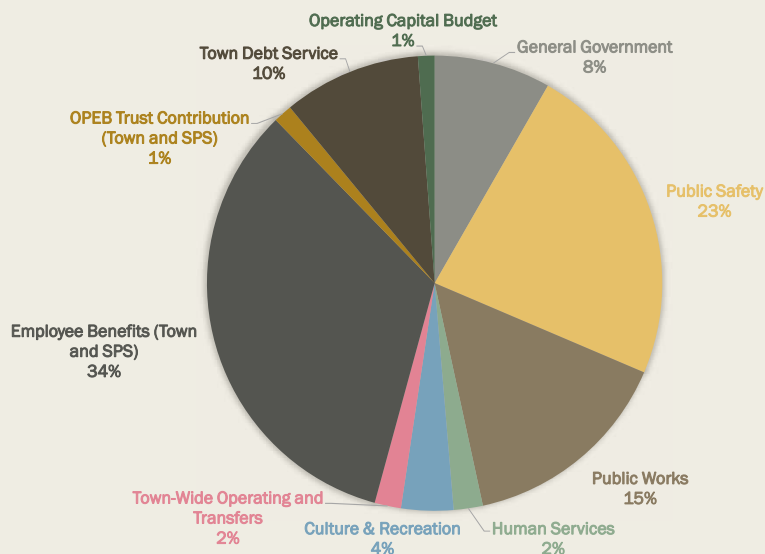
4

CHANGE IN LS ASSESSMENT

- LS is increasing by 4.49% in the Balanced Budget scenario.
- This is due to a change in the assessment, which is now 86.95% from 85.97% this year.
- This results in an addition increase of approximately \$170,000 to LS
- The assessment is determined by the ratio of Sudbury's pupil enrollment to total LSRHS pupil enrollment as of October 1 of the 3 years preceding FY19.

5

TOWN BUDGET BREAKDOWN



6

THE BUDGET BY CLUSTER

- No changes in headcount throughout budget
- Budgets include already bargained for increases, as well as step increases if eligible
 - 1% COLA effective on June 30, 2018 at midnight totals \$122,754
 - Steps for all employees totals \$187,666

7

THE BUDGET BY CLUSTER GENERAL GOVERNMENT

- Selectmen
 - Level service
- Human Resources
 - Level service
- Finance (Accounting, Treasurer/Collector)
 - Level service
- Conservation
 - Level service
- Planning
 - Level service

8

THE BUDGET BY CLUSTER

GENERAL GOVERNMENT

- Law- \$17,000 increase for increased contract and increased hours for labor counsel
- Assessor- \$2000 contractual increase for Patriot Properties
- Information Systems- \$25,000 increase in software
 - *Projects include:*
 - Firewall software subscriptions for URL filtering, Global Protection, Threat Prevention, Wildfire and hardware maintenance
 - ArcServe Cloud (backup to mission critical servers)
 - Data security platform
 - Increased website costs
 - See Click Fix
 - Security Awareness training
- Town Clerk- \$20,500 increase due to state election and early voting

9

THE BUDGET BY CLUSTER

PUBLIC SAFETY

- Police
 - *Level service budget*
- Fire
 - *Includes three years of COLA in this budget from prior contract settlement*
 - *All expenses are level funded*
- Building Department
 - *Level service budget*

10

THE BUDGET BY CLUSTER

PUBLIC WORKS

- Engineering
 - *Includes three years of COLA from prior contract settlement*
- Streets and Roads
 - *Level service budget*
- Trees and Cemeteries
 - *\$3,000 increase for tree contract*
- Parks and Grounds
 - *\$20,000 to aerate and slice seed the fields two times per year to improve conditions*
- Combined Facilities Department
 - *Level service budget*

11

THE BUDGET BY CLUSTER

HUMAN SERVICES

- Board of Health
 - *\$21,000 increase to contracted services*
 - State regulations require bi-annual inspections
 - Anticipate need for 800 hours of inspection in FY19
 - Currently contract for 236 hours per year at \$38 per hour
 - Number of hours has been the same since 1996 (number of permitted food establishments has more than doubled from 28 in 1996 to almost 70 now)
 - Increased hours are needed for Meadow Walk pre-opening and new inspections, the bottle and bag bill, and septic inspections

12

THE BUDGET BY CLUSTER

HUMAN SERVICES

TYPE OF INSPECTON	PURPOSE	NUMBER OF HOURS
Food Inspections	Pre-Opening Meadow Walk/Bag and Bottle	250
Food Inspections	Additional Bi-Annual/ Complaints	200
Septic Inspections	Installation and Repairs	300
Miscellaneous	Nuisance, Noise Survey, Coverage	50
	TOTAL	800

13

THE BUDGET BY CLUSTER

HUMAN SERVICES

- Council on Aging
 - \$4,000 increase to general expense to bring in line with FY17 actual after budget cut last year
- Veterans Affairs
 - \$20,000 increase to veteran's benefits.
 - Meets current level of need
 - We are reimbursed 75% by the state.

14

THE BUDGET BY CLUSTER CULTURE AND RECREATION

- Goodnow Library
 - \$13,485 contractual increase for automation (*Minuteman Network*)
 - \$8,000 increase for *Books and Materials*
 - In order to be eligible for state aid, must be 15% of budget
- Recreation
 - *Level service*
- Historical Commission
 - *Level service*
- Historic Districts Commission
 - *Level Service*

15

THE BUDGET BY CLUSTER TOWN WIDE OPERATING

- Town Wide Operating Expenses
 - *Level service*
- Town Reserve Account
 - *Removed the unemployment*
- Salary Contingency

16

THE BUDGET BY CLUSTER

TOWN WIDE OPERATING OPEB

- The OPEB Trust Fund Contribution budget is \$540,209, which is an increase of \$70,000 from FY18 (Town and SPS)
- The Town's intent is to increase by \$70,000 annually until the Annual Required Contribution has been achieved
- As of today, that would be 11 years, but is evaluated bi-annually

17

THE BUDGET BY CLUSTER

EMPLOYEE BENEFITS

- SPS and Town together (\$5,347,339 Town and \$6,956,917 SPS) (4.5% increase)
 - *FICA Medicare*
 - \$17,000 increase
 - *Medical insurance*
 - \$84,000 increase
 - *Retiree Medical*
 - \$117,835 increase
 - *County Retirement*
 - \$282,357 increase

18

THE BUDGET BY CLUSTER DEBT

- Debt is decreasing by \$352,425
 - All but approximately \$2,480 of this is exempt debt.

19

THE BUDGET BY CLUSTER OPERATING CAPITAL BUDGET

	FY17 Actual	FY18 Appropriated	FY19 Recommended
Operating Capital Budget			
Sudbury Public Schools	-	-	102,000
LS Regional High School	-	-	97,818
Selectmen/Town Manager	-	-	100,000
Information Systems	-	-	40,900
Town Clerk & Registrars	-	-	50,000
Police	-	-	25,600
Fire	96,000	40,000	-
Engineering	-	38,000	-
Streets & Roads	80,586	37,190	120,000
Parks and Grounds	-	-	100,000
Combined Facilities	175,914	298,000	140,000
Recreation	-	-	45,000
Total Operating Capital Budget	352,499	413,190	821,318

20

FULL TIME HEAD COUNT

Fiscal Year	Head Count
2017	170
2018	175
2019	175

21

ENTERPRISE FUNDS

- Field maintenance and transfer station budgets are level funded
 - *Likely require little to no rate increase*
- Pool budget is increasing slightly to include benefits for the first time
 - *Will require a rate increase—still calculating that*

22

VOCATIONAL EDUCATION

- Budget decreasing by 10 percent

23

DEPARTMENT HEADS

- Departments heads have gathered here with us tonight to discuss their budgets and answer questions.
- I know that each of them would be eager to answer your questions and address any concerns you may have regarding changes.

24

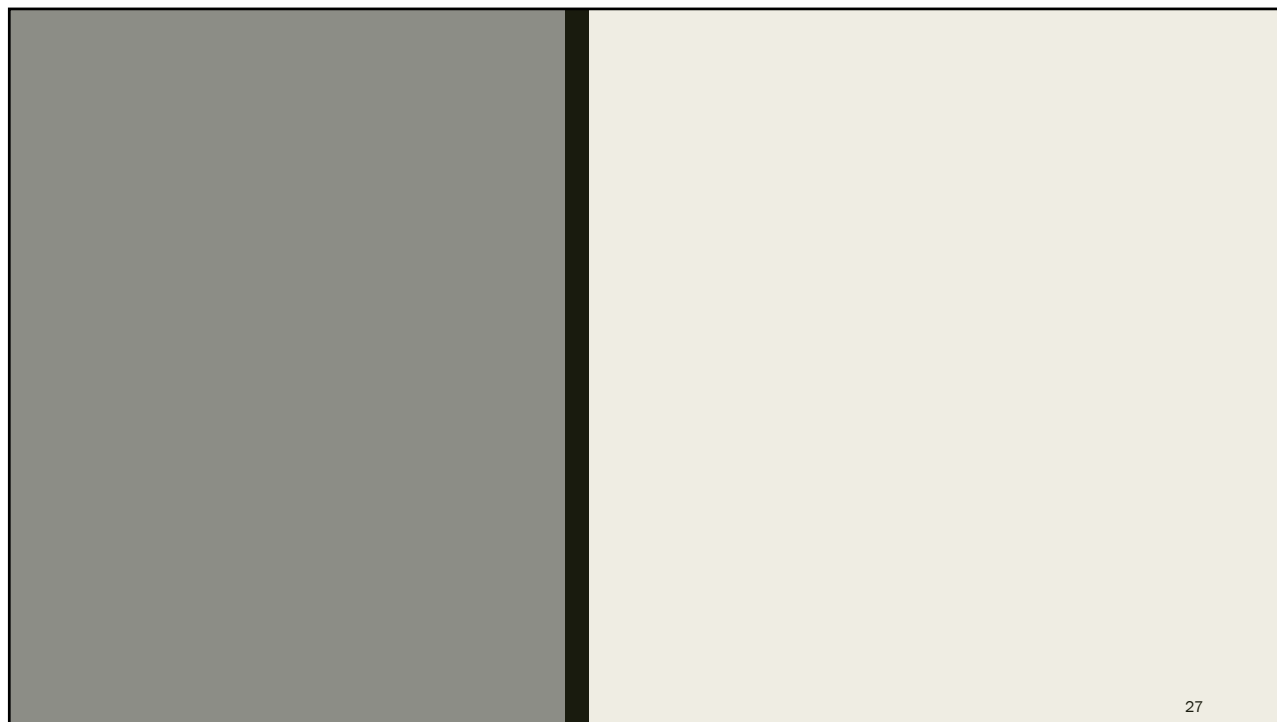
THANK YOU

- I'd like to take the opportunity to thank my budget team: Maryanne Bilodeau and Dennis Keohane.
- Additionally, I'd like to thank the Department Heads. Each of them submitted a thoughtful and concise budget, met with the budget team, and were team players throughout this process.

25

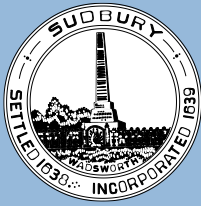


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27

Effective 7/1/15, all steps on the salary schedule shall be increased by one percent (1%);
 Effective 1/1/16, all steps on the salary schedule shall be increased by one percent (1%);
 Effective 7/1/16, all steps on the salary schedule shall be increased by two percent (2%);
 Effective 7/01/17, all steps on the salary schedule shall be increased by two percent (2 %),
 Effective 6/30/18, at 11:59 pm so that there shall be no financial impact in fiscal year 2018, all steps on the salary schedule shall be increased by one percent (1%)



MISCELLANEOUS (UNTIMED)

4: Loring Parsonage Lease

REQUESTOR SECTION

Date of request:

Requested by: Patty Golden

Formal Title: Discuss Town Meeting article on Loring Parsonage lease

Recommendations/Suggested Motion/Vote: Discuss Town Meeting article on Loring Parsonage lease

Background Information:
attached draft

Financial impact expected:

Approximate agenda time requested:

Representative(s) expected to attend meeting:

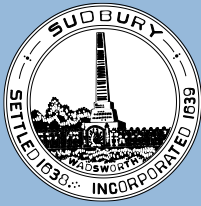
Review:

Patty Golden	Pending
Melissa Murphy-Rodrigues	Pending
Barbara Saint Andre	Pending
Robert C. Haarde	Pending
Board of Selectmen	Pending

01/23/2018 7:30 PM

DRAFT

To see if the Town will vote to authorize the Board of Selectmen to let or lease the Loring Parsonage for a term of up to 99 years for the purpose of building a Sudbury historical museum on such terms as the Board of Selectmen deem appropriate, or take any other action relative thereto.

**SUDBURY BOARD OF SELECTMEN**

Tuesday, January 23, 2018

MISCELLANEOUS (UNTIMED)**5: Discussion with LS Supt on budget****REQUESTOR SECTION**

Date of request:

Requested by: Patty Golden

Formal Title: Discussion with L-S Superintendent Bella Wong regarding LS budget.

Recommendations/Suggested Motion/Vote: Discussion with L-S Superintendent Bella Wong regarding LS budget.

Background Information:

Financial impact expected:

Approximate agenda time requested:

Representative(s) expected to attend meeting:

Review:

Patty Golden	Pending
Melissa Murphy-Rodrigues	Pending
Barbara Saint Andre	Pending
Robert C. Haarde	Pending
Board of Selectmen	Pending

01/23/2018 7:30 PM

Lincoln-Sudbury Regional High School Proposed FY 2019 Budgets

Updated Since 12/14/17

PRESENTATION TO
SUDBURY FINANCE COMMITTEE

JANUARY 22, 2018

LINCOLN SUDBURY REGIONAL SCHOOL COMMITTEE

JANUARY 23, 2018

SUDBURY BOARD OF SELECTMEN

JANUARY 23, 2018

LINCOLN FINANCE COMMITTEE

JANUARY 24, 2018

1

The budget supports

- LS Core Values

Fostering cooperative and caring relationships
Respecting human differences
Pursuing academic excellence
Cultivating Community

- Our school goals for improvement

What students should be able to do by the time they graduate
Access to equity and excellence for all students
Ensuring socio-emotional supports for students and staff
Cultivating Community

- Capacity to recruit and retain high quality faculty and staff

- An educational program that fosters student growth for post-graduate success

2

Factors affecting budget assumptions

Forecasting state aid and projected revenues

Decreasing federal aid

Variability of Out of District Placements/Tuition/Specialized Education Costs

Sustaining appropriate academic and social emotional supports to reach and teach our wide range of student learners

Maintaining current and relevant technology supports

Expectations for high performance outcomes (re-gained Level 1 Status)

Monitoring class size

Ensuring a safe school environment

Conservative capacity for new program development

Funding the OPEB liability

Rising health insurance costs

Utility rate case Utilities will be level funded

3

Lincoln-Sudbury FY 19 Budget Overview

Incorporates new teacher compensation agreement

Maintains current educational program

Partial restoration of lines reduced for FY18

Makes financial assumptions on best data available

Reallocation and increase of FTE to balance class size

Addresses Lincoln Budget Guidance

Addresses Sudbury Budget Guidance

4

Budget Financial Assumptions

- Newly negotiated agreements for compensation

	COLA Effective Day 1	COLA Midyear
July 1, 2018 - June 30, 2019	0.5%	1.5%
July 1, 2019 - June 30, 2020	0.0%	3.0%
July 1, 2020 - June 30, 2021	0.5%	2.0%

- 0.58 FTE net increase to staffing Science, Math, Instr Technology (math/science)
- Federal and state grants level funded*
- Reduction to anticipated state Circuit Breaker reimbursement
- 10% increase to health insurance *

(continued)

5

Budget Financial Assumptions

- 10% increase to non MTRS pension funding 6.8% increase to non MTRS pension funding
- 5% increase in regular education transportation*
- Partial restoration of funding for instructional capital (\$25,000)
- 2% increase to expenses
- Increase contribution (\$24,402) to fund OPEB accrued liability Possible increase to \$60,000?
- Possible impact to net metering credit affecting utilities Resolved to level fund
- No adjustment to current student fee structure

6

Current Median Class Size

Department	Median Class Size
Computer	20
English	22
FATA	20
History	23
Math	23
Science	24
Wellness	20
World Language	21

7

% Students in median class size at or above 25

	2014-15	2015-16	2016-17	2017-18
Science	56	48	55	54
Math	31	44	32	37
English	60	54	49	37
History	40	51	40	26
Language	37	33	25	30
FATA	36	34	22	27
Wellness	22	27	9	6

8

Math and Science 2017-18 Class Sizes

MATH

3 Advanced Algebra II:

25/25/26

7 Advanced Placement Classes:

31/30/25/20/23/27/26

SCIENCE

11 Earth Science I:

25/26/26/26/26/26/ 27/27/27/27/27

3 Accelerated Bio:

25/26/26

8 Biology 1:

22/22/23/24/25/25/26/26

2 Accelerated Chemistry:

28, 26

9 Chemistry I:

22/22/25/25/26/26/26/26

4 Accelerated Physics:

30/29/28/28

3 AP Physics:

19/27/25

9

Lincoln-Sudbury Regional High School In-District Enrollment Five Year Cohort Survival Enrollment Projection by Grade							
Grade Level	FY17 Actual Enrollment 10/1/2016	FY18 Actual Enrollment 10/1/2017	FY19 Projected Enrollment	FY20 Projected Enrollment	FY21 Projected Enrollment	FY22 Projected Enrollment	FY23 Projected Enrollment
9	369	409	392	360	372	371	346
10	378	359	410	388	356	368	367
11	380	374	354	399	378	347	359
12	443	387	380	356	402	381	349
Total Projected Enrollment	1570	1529	1535	1503	1508	1467	1422

10

Proposed adjustments to educational program

Add:	0.25 FTE	Science *
	0.25 FTE	Math *
	0.25 FTE	Instructional Technology (Math/Science Staff) *
Reduce:	-0.17 FTE	Wellness
Net increase	0.58 FTE	

- **To address large class sizes**

- DESE Guideline for IT is 1.0 FTE per 60 to 120 instructional staff. LS currently has .75 per 150 instructional staff.

- **Note:** If chorus enrollment does not exceed 80 students, second section will not be offered and .25 FTE will be re-allocated to address other high class size needs.

- **Further note:** Proposed reduction of .08 elective is restored to FATA department and request for .25 FTE increase to Special Education has been eliminated.

11

Math/Science Average Class Size projected for 2018-19

		avg class sz	"Maximum"
Accelerated and Level 1 Earth Science	80% of 9th	24.3	24
Accelerated and Level 1 Biology	75% of 10 th	25.7	24
Biology 2	20% of 10 th	17.1	16
Chemistry 2	20% of 11 th	16.9	16
Accelerated and AP Physics	45% of 12 th	26.4	24
Geometry Standard	30% of 9 th	22.7	21
	15% of 10 th		
Acc Advanced and Advanced Algebra II	60% of 10 th	25.9	24
Algebra II Standard	25% of 10 th	23.3	
AP Calculus	15% of 11 th	27.3	24
	35% of 12 th		

12

Recommended FY 19 Budget Numbers

- \$32,254,422 4.84%

Presented to L-S School Committee December 14, 2017

- \$32,184,970 4.62%
Updated for utilities and pension

Reduction of: \$69,452

Reflects level program, partial restoration of instructional capital and net increase of .58 FTE professional staffing (instead of .67 FTE).

13

Funding Gap

Funding gap in excess of 3.6% = \$329,228 (OPEB funding increase of \$24,402)

Funding gap in excess of 3.6% = \$364,826 (OPEB funding increase of \$60,000)

14

Proposed adjustments and reductions

Proposed additional funding resource of \$250,000 from E and D

E & D will certify at \$950,000

Remaining gap would therefore be \$114,826 (OPEB at \$60,000) or \$79,228 (OPEB at \$24,402)*

Proposed Adjustments:

- \$ 5,975 removing request Assist Tech for Special Education .25 FTE & reducing .17 FTE Wellness
- \$31,923 from custodial cleaning
- \$16,330 Chapter 70 adjustment to FY18 anticipated actual
- \$25,000 from Instructional Capital

Total: \$79,228 (OPEB at \$24,402)*

15

Progression of adjusted budget numbers

- | | |
|---|-------|
| • \$32,254,422 | 4.84% |
| • \$32,184,970 (adjusted for utilities and pension) | 4.62% |
| • \$32,105,742 (itemized reductions) | 4.36% |

Net reduction between 4.84% and 4.36% = \$148,680

- | | |
|---|-------|
| • \$31,855,742 (minus \$250,000 from E & D) | 3.60% |
|---|-------|

- All inclusive w/ debt & OPEB
- Recommendation to hold at OPEB increase of \$24,402

To Be Presented to L-S School Committee January 23, 2018

16

OPEB Funding History

FY 16 = \$75,984

FY 17 = \$238,114 (213% increase on annual contribution from FY 16)

FY 18 = \$358,707 (42 % increase on annual contribution from FY 17)

FY 19 = \$383,109 (7% increase on annual contribution from FY 18)

Current total contribution = \$734,984

Plus \$383,109 = \$1,118,093 plus interest at end of FY19 . over 34% increase in one year.

17

Reductions without use of E & D

On top of .17 Wellness reduction, additional reductions would include:

Eliminate net request for **.58 FTE** (.25 each Math, Science, IT minus .17 Wellness)

English	.5 FTE	History	.5 FTE
Language	.5 FTE	Special Educator	.25 FTE
Math	.25 FTE	Clinical Counselor	.25 FTE
Science	.25 FTE	Total:	3.58 FTE
FATA	.17 FTE		
Wellness	.17 FTE		
Computer	.17 FTE		

18

Impact to average class sizes if teacher reductions were to occur

All semester English would increase from 23.1 to 24.9

AP US History and 20th Century would increase from 23.8 to 26.0 All

11th and 12th grade History would increase from 23.6 to 24.5

High Science class average size would remain same plus an elimination of an elective or of AP Chemistry.

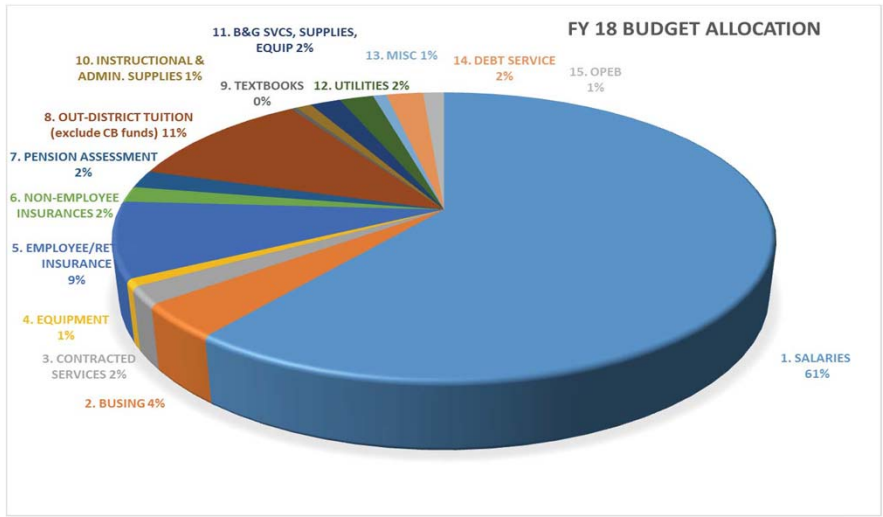
High Math class average would remain same plus Trig Precalc Acc Adv and Adv would increase from 22.75 to 27.7

Possible elimination of Mandarin or one section of Mandarin and one section of another language

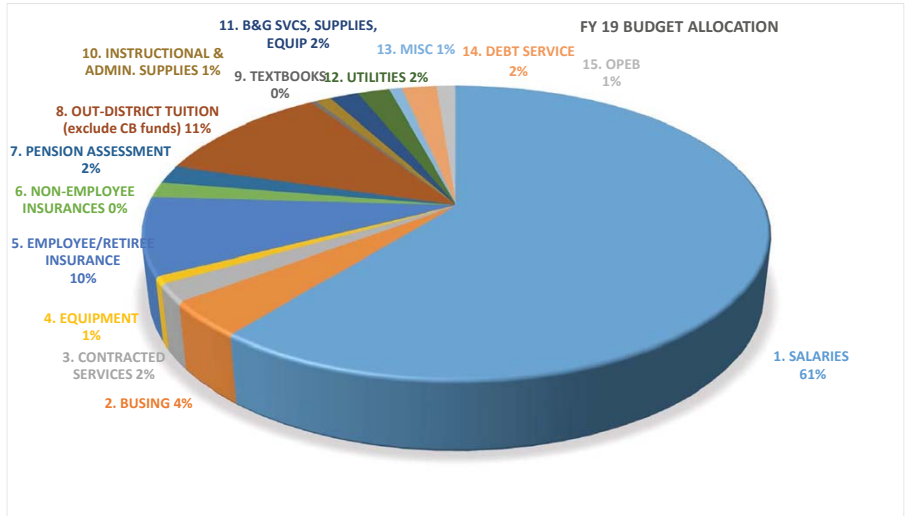
19

Lincoln Sudbury Regional School District FY 19 Proposed Budget: Major Account Categories January 22, 2018					
	FY 18 Budget	FY 18 Projected	FY 19 Budget	FY 19 Budget Growth from FY 18 Budget	% Change
Salary Accounts	\$ 18,947,787	\$ 18,950,000	\$ 19,728,702	\$ 780,915	4.12%
Contracted Services (Busing, Legal Etc.)	\$ 1,839,287	\$ 1,860,562	\$ 1,926,525	\$ 87,238	4.74%
Instructional Support (Supplies, Texts, Equip)	\$ 521,170	\$ 493,777	\$ 548,394	\$ 27,224	5.22%
Insurance and Pensions	\$ 3,750,261	\$ 3,750,000	\$ 4,082,401	\$ 332,140	8.86%
Out of District Tuition (Incl. Circuit Breaker)	\$ 4,977,000	\$ 4,983,653	\$ 4,940,810	\$ (36,190)	-
Utilities/Building/Grounds	\$ 1,119,103	\$ 1,089,462	\$ 1,096,885	\$ (22,218)	-1.99%
Debt Service	\$ 670,800	\$ 670,800	\$ 649,675	\$ (21,125)	-3.15%
OPEB	\$ 358,707	\$ 358,707	\$ 383,109	\$ 24,402	6.80%
Other	\$ 234,594	\$ 215,611	\$ 249,241	\$ 14,647	6.24%
(Circuit Breaker Funding)	\$ (1,654,539)	\$ (1,654,539)	\$ (1,500,000)	\$ 154,539	-9.34%
TOTAL APPROPRIATED BUDGET	\$ 30,764,170	\$ 30,718,033	\$ 32,105,742	\$ 1,341,572	4.36%
Total with OPEB without Debt	\$ 30,093,370	\$ 30,047,233	\$ 31,456,067	\$ 1,362,697	4.53%

20



21



22

LSRHS FY 19 Preliminary Budget Proposal

Review of Out of District Placement Expenses

	FY 2016	FY 2017	FY 2018	FY 2019
Out of District Tuition (Including Circuit Breaker)	\$ 4,761,647	\$ 5,212,186	\$ 4,977,000	\$ 4,940,810
# of students	62	63	56*	59
			(4 cost shares out)	(4 cost shares in)
Special Ed Transportation	\$ 634,200	\$ 610,000	\$ 610,000	\$ 655,000
Circuit Breaker Funding	\$ (1,150,000)	\$ (1,500,000)	\$ (1,654,539)	\$ (1,500,000)
Net Operating Costs	\$ 4,245,847	\$ 4,322,186	\$ 3,932,461	\$ 4,095,810
Variance	12.4%	1.8%	-9.0%	4.2%

23

Highlighted Budget Summary

1. Out of District Tuition line is decreased but.
2. Circuit Breaker Reimbursement assumption is decreased
3. Health Insurance expenses are increased
4. Regular Transportation expenses are increased by 5%
5. Middlesex Retirement System assessment increased by 6.8%
6. Incorporates new teacher compensation agreement
7. Net Increase 0.58 FTE to address math & science class size and state tech guidelines
8. Debt service continues to decrease
9. Possible rate case impact to utilities (resolved favorably)

24

Assessment

The Assessment is the total amount each town is charged for the cost to operate Lincoln-Sudbury Regional High School.

It is the net operating cost minus other revenue sources such as Chapter 70 State Aid, Transportation Aid, Circuit Breaker Reimbursement, Medicaid, and other receipts.

How much each town pays of the total assessment is determined by a blending of two formulas. One determined by the state and one determined by the regional agreement between Lincoln and Sudbury.

25

Assessment

1. Minimum Contribution is determined annually by the state. For this exercise we are using the FY18 minimum contribution number of: \$14,353,914: 87.04% is from Sudbury and 12.96% is from Lincoln.

2. The Apportionment Ratio represents each town's relative share of the Assessment based on a three year rolling average of in-school enrollment established each year on October 1. The FY19 Apportionment Ratio is applied to the budget net of the Minimum Contribution. For FY19, the ratios will be 86.95% for Sudbury and 13.05% for Lincoln - as determined by the regional agreement.

3. The final Net Assessment takes into account the Minimum Contribution. Apportionment calculations also includes debt service and OPEB funding. The blended apportionment ratio is 87.00% for Sudbury and 13.00% for Lincoln based on the FY18 minimum contribution rate.

*Note: These are preliminary estimates and subject to change when DESE releases Chapter 70 estimates in January 2018.

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Lincoln Sudbury Regional School District

FY 19 Preliminary Revenue Forecast: January 2018

Category	FY 16 Actual	FY 17 Actual	FY 18 Budget	FY 19 Budget
State Revenues	\$2,862,021	\$2,955,040	\$2,986,366	\$3,002,696
Chapter 70 Aid	\$297,341	\$300,463	\$325,903	\$325,903
Reg Trans Reimb				
	\$3,159,362	\$3,255,503	\$3,312,269	\$3,328,599
Other Revenues	\$21,500	\$51,474	\$35,000	\$35,000
Medicaid				
E-rate	\$3,146	\$0	\$2,500	\$2,500
Transcripts	\$7,587	\$9,763	\$7,500	\$7,500
Other Misc	\$16,939	\$24,378	\$10,000	\$10,000
E & D (or other sources)	\$0	\$0	\$0	\$250,000
Interest Income	\$11,331	\$9,579	\$10,000	\$10,000
	\$60,503	\$95,194	\$65,000	\$315,000
	\$3,219,865	\$3,350,697	\$3,377,269	\$3,643,599
Preliminary and estimated				
Assessments - Operating/Debt/OPEB	\$3,977,668	\$3,672,047	\$3,688,139	\$3,700,931
Lincoln * FY 19 is an estimate				
Sudbury *FY 19 is an estimate	\$22,071,385	\$22,879,135	\$23,698,762	\$24,762,716
	\$26,049,053	\$26,551,182	\$27,386,901	\$28,463,647
	\$29,268,918	\$29,901,879	\$30,764,170	\$32,105,742
Total Revenue				

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FY 19 Capital Requests

	Lincoln	Sudbury	Total
Apportionment Ratio	13.05%	86.95%	100.00%
Hot Water Heater	\$ 7,504	\$ 49,996	\$ 57,500
Additional Security Cameras	\$ 7,178	\$ 47,822	\$ 55,000
Telephone System Replacement	\$ 10,440	\$ 69,560	\$ 80,000

28

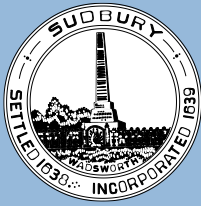
Budget Timeline

- Dec 6 Lincoln Joint Budget Workshop #1
 - Dec 11 Budget Presentation to L-S Staff
 - Dec 11 Sudbury Finance Committee Budget Questionnaire Presentation
 - Dec 14 Budget Presentation to L-S School Committee
 - Dec 31 Budget submission to Town of Sudbury Finance Director
 - Jan 22 Sudbury Finance Committee Budget Presentation
 - Jan 23 Presentation of proposal to address funding gap to L-S School Committee
Presentation to Sudbury BOS to address funding gap
 - Jan 24 Lincoln Joint Budget Workshop #2
 - Jan 31 Final Est. date of release of Governor's Budget Recommendation Released
 - Feb 13 LS Budget Hearing and Vote
- ***Note: Attendance at Capital Committee Meetings as requested by both towns

29

Thank You!

30



SUDBURY BOARD OF SELECTMEN
Tuesday, January 23, 2018

6

MISCELLANEOUS (UNTIMED)

6: ATM Warrant Articles

REQUESTOR SECTION

Date of request:

Requested by: Patty Golden

Formal Title: Discussion of ATM Warrant Articles

Recommendations/Suggested Motion/Vote: Discussion of ATM Warrant Articles

Background Information:
attached list

Financial impact expected:

Approximate agenda time requested:

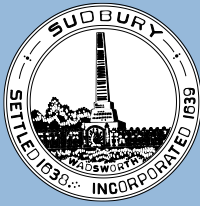
Representative(s) expected to attend meeting:

Review:

Patty Golden	Pending
Melissa Murphy-Rodrigues	Pending
Barbara Saint Andre	Pending
Robert C. Haarde	Pending
Board of Selectmen	Pending

01/23/2018 7:30 PM

Articles	Submitted by	Submitted
hear reports	BOS	
stabilization fund	BOS	
Fund litigation Sudbury Station	BOS	
Fund litigation Eversource	BOS	
FY18 budget adjustments	BOS	
Fairbanks	BOS	
Loring Parsonage Lease	BOS	
October Town Meeting	BOS	
Capital Bylaw	TM	
budget	TM	
free cash snow and ice	TM	
departmental revolving fund bylaw amendment	Finance	
marijuana	Planning	
Senior Tax Exemption	Assessors	



SUDBURY BOARD OF SELECTMEN
Tuesday, January 23, 2018

7

MISCELLANEOUS (UNTIMED)

7: 2018 Selectmen Newsletter Deadlines

REQUESTOR SECTION

Date of request: January 16, 2018

Requested by: Leila S. Frank

Formal Title: Discuss and possible vote to approve proposed 2018 Board of Selectmen Newsletter Schedule of Deadlines.

Recommendations/Suggested Motion/Vote: Discuss and possible vote to approve proposed 2018 Board of Selectmen Newsletter Schedule of Deadlines.

Background Information:
Please see memo attached

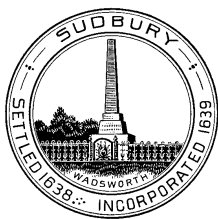
Financial impact expected:N/A

Approximate agenda time requested:

Representative(s) expected to attend meeting:

Review:

Patty Golden	Completed	01/16/2018 4:22 PM
Melissa Murphy-Rodrigues	Pending	
Barbara Saint Andre	Pending	
Robert C. Haarde	Pending	
Board of Selectmen	Pending	01/23/2018 7:30 PM



Town of Sudbury

Office of Selectmen

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January 16, 2018

To: Board of Selectmen

From: Leila Frank

Re: **2018 Board of Selectmen Newsletter Schedule of Deadlines**

Please see below proposed schedule for assignment, submission and approval deadlines for the 2018 Board of Selectmen's Newsletter. An email reminder will be sent 1 week prior to materials deadline. The newsletter will be posted on the website and sent to the email subscriber list on the business day following the Board's approval.

WINTER

BOS Meeting to Discuss Topic Assignments- Tuesday, Feb 6

Materials Due (to MMR/LSF)- Monday, Feb 19

BOS Meeting Approval- Tuesday, Feb 27

SPRING

BOS Meeting to Discuss Topic Assignments- Tuesday, March 20

Materials Due (to MMR/LSF)- Monday, April 16

BOS Meeting Approval- Tuesday, April 24

SUMMER

BOS Meeting to Discuss Topic Assignments- Tuesday, July 24

Materials Due (to MMR/LSF)- Monday, August 6

BOS Meeting Approval- Tuesday, August 14

FALL

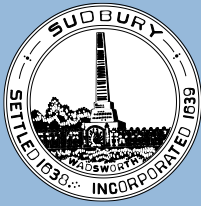
BOS Meeting to Discuss Topic Assignments- Tuesday, October 30

Materials Due (to MMR/LSF)- Monday, November 5

BOS Meeting Approval- Tuesday, November 13

2017 editions of the Board of Selectmen Newsletter can be found here:

<https://sudbury.ma.us/boardofselectmen/board-of-selectmens-newsletters/>



MISCELLANEOUS (UNTIMED)

8: Capital Planning Discussion

REQUESTOR SECTION

Date of request:

Requestor: Selectman Dan Carty

Formal Title: Capital Planning Discussion

Recommendations/Suggested Motion/Vote: Capital Planning Discussion

Background Information:
Attached document

Financial impact expected:

Approximate agenda time requested:

Representative(s) expected to attend meeting:

Review:

Patty Golden	Pending
Melissa Murphy-Rodrigues	Pending
Barbara Saint Andre	Pending
Robert C. Haarde	Pending
Board of Selectmen	Pending

01/23/2018 7:30 PM

CAPITAL IMPROVEMENT PLANNING GUIDE

DEVELOPING A COMPREHENSIVE COMMUNITY PROGRAM

AUGUST 2016

Attachment8.a: cipguidefinal.pd (2600 : Capital Planning Discussion)



DLS
DIVISION OF LOCAL SERVICES
MA DEPARTMENT OF REVENUE

PREPARED BY:

DLS | Technical Assistance Bureau
100 Cambridge Street, Boston, MA 02114
www.mass.gov/dls

INTRODUCTION

The Technical Assistance Bureau prepared this guide to assist Massachusetts municipalities in carrying out their responsibilities in planning, financing, and implementing capital improvements. It outlines the ten steps needed to establish a comprehensive capital improvement program (CIP) and includes an appendix with a sample bylaw, policies, and calendar helpful for implementing a CIP. Although the language in this guide is oriented to town governments, the information and forms presented can be readily modified for cities as well. The guidelines provide a framework to enable any municipality to make planned decisions about the construction and maintenance of its infrastructure and equipment. We encourage municipalities to tailor the CIP outline and procedural forms to fit local circumstances, such as organizational structure, budget timetable, or bylaw/charter authority.

WHAT IS A CAPITAL IMPROVEMENT PROGRAM?

A capital improvement program provides a blueprint for planning a community's capital expenditures and is one of the most important responsibilities of local government officials. It coordinates community planning, financial capacity, and physical development.

A CIP is composed of two parts—a capital program and a capital budget. The capital program is a community planning and fiscal management tool that spans five to ten years. The capital program identifies capital items, which are typically defined as tangible assets or projects that cost more than a certain threshold (e.g., \$25,000) and that have a minimal useful life span (such as five years), provides a planning schedule, and offers financing options. The capital budget is the upcoming year's spending plan for capital items that is presented to the legislative body for approval.

Developing a CIP that will ensure sound fiscal and capital planning requires effective leadership and the cooperation of municipal departments. For this reason, responsibility for overseeing the CIP process should rest with a community's chief executive, the board of selectmen. If a town employs a town administrator or a similarly empowered administrative officer, that person could be assigned the duty to coordinate the CIP, in conjunction with a CIP committee as a local option. The role of a CIP committee is to objectively analyze capital proposals and make recommendations to the selectmen on the annual capital budget and the ongoing capital program.

A complete, properly developed CIP has the following benefits:

- Facilitates coordination between capital needs and operating budgets
- Enhances the community's credit rating and control of its tax rate
- Deters sudden changes in debt service requirements
- Identifies the most economical means to finance capital projects
- Increases opportunities for obtaining federal and state aid
- Relates public facilities to public and private development plans
- Focuses attention on community objectives and fiscal capacity
- Keeps the public informed about future needs and projects
- Reduces costs by identifying and consolidating duplicative expenditures across municipal departments
- Encourages careful project planning and design to avoid costly mistakes and to help a community reach desired goals

The Technical Assistance Bureau also created a *Capital Improvement Planning Manual* with forms and instructions that municipalities can use to put an annual CIP program into practice. This manual and the associated worksheets referenced within this report are available through the following [link](#).

IMPLEMENTING A CAPITAL IMPROVEMENT PROGRAM

Step One Adopt a CIP Bylaw, Appoint a CIP Committee, and Set a Timetable

Towns that lack a town administrator, in particular, should consider establishing a CIP committee to provide a dedicated, advisory resource for overseeing its capital program. To create and empower a CIP committee requires the town to adopt a bylaw at annual town meeting ([M.G.L. c. 41, §106B](#)). The board of selectmen may also want to consider adopting formal policies to guide the town's capital planning process and debt management.

Each year, the CIP committee should create a timetable to give to all local officials involved in the CIP process, including all department heads and board chairs. Working backwards from the annual town meeting date, the calendar should specify deadlines for completing each step of the CIP process, allowing sufficient time to complete reviews and to present the committee's recommendations to the board of selectmen. The appendix includes a sample CIP committee bylaw, policies, and calendar.

Step Two Prepare an Inventory of Existing Capital Assets

Critical to implementing an effective CIP is the assembly of a complete inventory of all town and school properties, assets, and fleet. In creating this inventory, the CIP committee should include, at minimum, all buildings, fleet, and equipment, but it is desirable to include utilities, roads, and sewers as well. For each asset, the inventory should detail (as applicable): the dates built, acquired or last improved, original cost, current condition, expected useful life, depreciated value, extent of use, and any scheduled replacement or expansion dates.

As a starting point, the CIP committee can refer to the schedule of fixed assets that the town accountant is required to maintain per Statement 34 of the Governmental Accounting Standards Board.¹ A list of insured assets from the town's insurance carrier may also provide useful data. Finally, the CIP committee should solicit asset information from each department head and board chair. In the Capital Improvement Planning Manual are sample forms for collecting this data.

Step Three Determine the Status of Previously Approved Projects

The next step is to review projects already underway, determine if additional funds are needed, and ascertain the amount of unspent funds available from completed or discontinued projects. This

¹ www.gasb.org/st/summary/gstsm34.html

verification process is a prerequisite to conducting a full analysis of fiscal capacity, and the summary reporting of it helps keep officials involved in the budget process informed of the progress of projects approved in prior years.

Step Four Assess the Town's Financial Capacity

With the assistance of the accountant and treasurer, the town administrator should analyze the town's ability to afford major expenditures by examining recent and anticipated trends in revenues and expenditures, including debt and other liabilities. This analysis helps the CIP committee to propose a funding source schedule designed to:

- Keep the tax rate stable
- Balance debt service and operating expenditures
- Determine available debt capacity and acceptable debt service levels
- Maximize intergovernmental aid for capital expenditures

Step Five Solicit, Compile, and Evaluate Project Requests

The CIP committee next solicits departmental requests for capital projects. Using forms like those in the Capital Improvement Planning Manual, each department submits requests, which should include clear details of each project's justification, cost, net effect on the operating budget, and implementation schedule.

Once the project proposals are compiled, the CIP committee evaluates each based on criteria related to policy objectives, including:

- Preserve or enhance town assets – Will the project maintain or improve an existing facility? What is its anticipated useful life? Does it replace a piece of equipment needed to provide public services? Is the current asset beyond its reasonable life? Is the acquisition part of a scheduled replacement plan to keep vehicles or equipment operational and preclude major repair costs?
- Increase government efficiency and effectiveness – Does the project reduce operating costs (e.g., eliminate costly repairs) or increase effectiveness? Does it reduce potential legal liability (e.g., repair a broken sidewalk) or threats to service continuity (e.g., replace an old street sweeper before it breaks down completely)? Does it improve customer service or provide a new, needed service?

- Be a good steward of public resources – Does the project increase revenues? Are grant funds available to cover a portion or all of the cost?
- Consider impacts on the operating budget – What types of ongoing savings might be realized from the project? Does it increase operating costs?

In addition, the team evaluates each project for its influence on the following policy areas:

- Public health and safety
- Education
- Economic growth
- Aesthetics / historic preservation
- Cultural and recreational opportunities
- Environmental sustainability

Step Six Establish Project Priority

In this step, the CIP committee ranks capital proposals as objectively as possible. This is perhaps the committee's most difficult task, although the select board's adoption of capital improvement and debt policies can provide helpful guidance. In addition to formal policies, use of a rating sheet can facilitate objectivity. Committee members should review project proposals using consistent criteria and evaluating each in relation to the others to determine their relative importance. This will enable the committee to prioritize projects based on objective analysis in context with community goals.

Established criteria help differentiate between the merits of each project proposal, but they need not be used rigidly in developing a CIP plan. For example, projects receiving modest scores because they do not contribute to policy areas but are critically needed (such as replacing very aged equipment) can be elevated for consideration in the plan based on need and resource availability.

Step Seven Develop a CIP Financing Plan

Based on adopted policies and an assessment of the town's financial capacity, the CIP committee must recommend a method to finance each project. There are various ways to finance capital improvement projects. The broad range of options include bonding for municipal debt, strategically managing local financial resources, and taking advantage of state and federal grant programs.

MUNICIPAL DEBT

For very costly capital projects, general obligation bonds represent the most common funding method. Typically, these are issued for time periods ranging from five to 30 years, over the course of which the community pays off the debt principal and interest. Paying the debt over time has the advantage of allowing capital expenditures to be amortized over the life of the project. We advise communities to consult with their financial advisor when contemplating issuing debt.

Funding sources to pay back the debt can include:

- Bonds funded within Proposition 2½ tax limits: In choosing this option, a community must carefully plan the funds used to pay the debt service to avoid impacting the annual operating budget and remain within the tax levy limitations of Proposition 2½ ([Levy Limits: A Primer on Proposition 2½](#)).
- Bonds funded outside Proposition 2½ tax limits: This option is known as a debt exclusion, or exempt debt, because it involves a temporary exemption from the tax limit imposed by Proposition 2½. To pay this debt service, a community increases the annual property tax rate for a range of fiscal years until the bond is paid off. This funding requires a two-thirds approval vote of town meeting and a subsequent majority approval of voters participating in a ballot vote. Prior to the voting, local officials must determine and present the debt exclusion's impact on the tax rate so that voters can understand the financial implications ([Proposition 2½ Ballot Questions - Requirements and Procedures](#)).
- Bonds funded with enterprise funds: When a capital project relates to an enterprise fund ([M.G.L. c. 44, §53F½](#)) operation, such as a sewer department, user fees are used to pay the debt service. The state often subsidizes interest costs, and grant funds may also be available at times. A community must analyze the cost of an enterprise capital project for its impact on user rates. Enterprise fund debt service does not affect the general operating budget unless the community needs to use general funds to subsidize user fee revenues.

LOCAL FUNDING STRATEGIES

For some smaller purchases or projects, communities can choose to use funds available in a given year. To help ensure consistent capital funding levels year to year, there are also a variety of long-range fiscal planning strategies.

- Free Cash: Free cash is defined as the remaining, unrestricted funds from operations of the previous fiscal year, as certified by DLS. After certification, a community may appropriate free cash for any municipal purpose.
- Enterprise Retained Earnings: Enterprise fund operations, like water and sewer, may accumulate an operating surplus to fund future capital expenses. This surplus, known as retained earnings, is similar to free cash and must be certified by DLS before it can be used, but the use of the retained earnings of an enterprise is restricted to enterprise-related expenditures.
- Capital Outlay / Pay-As-You-Go: A pay-as-you-go capital project is one that can be funded with current revenues and paid off within one year. If the community has the financial capacity to pay for the project in a year, the taxpayers' cost is lower than bonding because no interest is involved. This method takes careful planning to avoid impacting the annual operating budget.
- Capital Outlay Expenditure Exclusion: This funding mechanism allows the community to raise the total dollar cost of a capital purchase or project through a one-year increase in the tax levy. This also avoids the long-term interest costs associated with borrowing funds. As with a debt exclusion, it requires a two-thirds vote of town meeting and a majority vote in a community-wide referendum ([Proposition 2½ Ballot Questions - Requirements and Procedures](#)). Note that a capital exclusion can only be used to fund municipal purposes for which the town is authorized to borrow money as defined in state statutes.
- Capital Stabilization Funds: Local officials can create and set aside money in multiple stabilization funds ([M.G.L. c. 40, §5B](#) and [Informational Guideline Release \(IGR\) 04-201](#)), outside of the general fund, for different purposes, including paying for all or portions of future capital projects. A two-thirds vote of town meeting is required to create a special stabilization fund as well as to appropriate money into and out of the fund. This type of fund can also be set up in conjunction with an enterprise fund.

Two things should be noted regarding an enterprise fund stabilization fund. First, any special stabilization fund is maintained within the community's trust funds and not in the enterprise fund. Second, while the purpose of a special stabilization fund may be changed by town meeting, it is our legal opinion that when money is transferred from an enterprise fund it is restricted to the enterprise fund purpose. This restriction would not apply to general fund revenues appropriated to a special stabilization fund.

- Special Purpose Funds: State statutes permit communities to establish various special purpose accounts, which set aside money for a restricted, specific purpose, some of which may be investment in departmental facilities and equipment. Individual statutes govern the establishment and use of these accounts. Examples include the sale of cemetery lots and off-street parking fee accounts.
- Revolving Funds: With a revolving fund, a community can set aside revenues received through fees and charges for a specific service. These must be annual authorized by town meeting with the max amount to be spent, receipts credited, and the purpose for which funds may be spent, including capital costs ([M.G.L. c. 44, §53E½](#)).
- Overlay Surplus: Overlay reserve is an annual account to cover anticipated property tax abatements and exemptions for that fiscal year. Any balance in the overlay accounts in excess of the remaining amounts to be collected, abated, or to satisfy an Appellate Tax Board case in that year may be transferred by the assessors' initiative or within ten days of request by the chief executive ([IGR 11-101](#)). These (overlay surplus) funds may be appropriated by town meeting for any purpose for which a town may expend funds or close to fund balance at year end.
- Surplus Bond Proceeds: After completion or abandonment of a project, the legislative body may appropriate any balance of remaining bond proceeds to a purpose which debt may be authorized for an equal or longer period of time than the original issue ([M.G.L. c. 44, §20](#)).
- Sale of Surplus Real Property: Pursuant to state statute, when real estate is sold, the proceeds must first be used to pay any debt incurred in purchasing the property. If no debt is outstanding, the funds "may be used for any purpose or purposes for which the city, town or district is authorized to incur debt for a period of five years or more...except that the proceeds of a sale in excess of five hundred dollars of any park land by a city, town, or district shall be used only by said city, town, or district for acquisition of land for park purposes or for capital improvements to park land" ([M.G.L. c. 44, § 63](#)).
- Community Preservation Act (CPA): Through this program, a community raises funds for a range of projects designed to acquire or preserve historic, conservation, recreational, and affordable housing assets defined under [M.G.L. c. 44B](#). Revenues are raised through a surcharge of up to three percent on real property tax bills and matching dollars from the state. Acceptance requires a town meeting approval or a citizen petition, together with a referendum approval by majority vote.

Pursuant to the acceptance of [M.G.L. c. 44B](#), the town also creates a community preservation fund to receive all the monies collected to support a CPA program, including but not limited to, tax surcharge receipts, proceeds from borrowings, funds received from the state, and proceeds from the sale of certain real estate. A town's community preservation committee, established in accordance with the statute, analyzes the potential for full or partial CPA funding and makes its own town meeting recommendations. It is good practice to coordinate the work of the CIP committee and the community preservation committee to present a cohesive package rather than following a piecemeal approach.

STATE AND FEDERAL FUNDING SOURCES

Communities can seek capital funding from any of several funds and grants offered by the state and federal governments. Examples include:

- Chapter 90 Roadway Funds: These are funds that the state's Department of Transportation allocates to municipalities each year for road maintenance, construction, and equipment.
- Massachusetts Department of Environmental Protection's State Revolving Loan Funds: These include the Clean Water State Revolving Loan Fund and the Drinking Water State Revolving Loan Fund. Both typically offer a mix of grant funds and low interest loans. Repayment does not begin until two years after the monies have been borrowed.
- Massachusetts School Building Authority (MSBA): MSBA provides funding for school design and construction projects. For an eligible community, MSBA determines a reimbursement amount based on community need, with a minimum base rate of 31% that may be increased depending on the community's income, property wealth, and poverty rate.
- Massachusetts Water Resources Authority (MWRA) Loan and Grant Programs: Predominant among these are the Inflow and Infiltration Program and Local Pipeline Assistance Program.
- Community Development Block Grant: This federal program administered by the Department of Housing and Urban Development offers grant money for local development projects.
- The Parkland Acquisitions and Renovations for Communities (PARC), Green Communities, and MassWorks Infrastructure Program are some other examples of state funding sources.

Step Eight Annually Present the Capital Program and Capital Budget

The CIP committee should present an annual capital report to the board of selectmen for review and adoption. The report should provide the committee's analysis of the town's fiscal capacity and summarize its recommendations for the upcoming year's capital budget and for the multiyear CIP program as well.

The board of selectmen may hold a public hearing to present the CIP and solicit citizen comment. If the board typically holds a hearing on the annual operating budget, it can incorporate the CIP hearing into it also. The board of selectmen considers (and may amend) the proposed capital budget and program and subsequently forwards these to the finance committee.

The finance committee reviews and recommends action on the capital budget in context with the overall capital program. A finance committee recommendation to amend the capital budget would suggest disagreement with portions of the capital program, and these differences should be resolved with the selectmen prior to town meeting.

In preparing the town meeting warrant, it is good practice to set capital budget items apart in their own warrant article(s), separate from the main, operating budget article. However, the town could also incorporate capital items as part of the omnibus budget but list them separately as specific appropriations. A CIP bylaw might also dictate that no capital expenditure appropriation may be voted that has not been considered in the CIP committee's report to the selectmen (unless the CIP committee explains the omission in writing). The sample CIP bylaw in the appendix contains a version of this language.

A presentation by the town administrator or selectmen of the entire capital improvement program at annual town meeting demonstrates to the community that the capital budget is part of a long-range plan to maintain and upgrade the town's infrastructure. This practice thereby informs those present of the ongoing need for large capital expenditures and provides them with the opportunity to look into the future and consider the quality of services that will be provided. Town meeting's adoption of the capital budget informs the rest of the community of the commitment to plan for and fund the acquisition and/or development of capital facilities.

Step Nine Monitor Approved Projects

Once town meeting adopts the capital budget and the fiscal year begins, departments are authorized to begin implementing projects. Before purchasing authorized items departments should communicate with the treasurer to make sure the timing is right given the community's cash

flow. The board of selectmen, through the town administrator and/or CIP committee, should monitor department progress. Periodic reports by the CIP committee to the selectmen should indicate changes in the targeted completion dates, identify serious problems, and document the financial status of each project. Those reports may be based on project updates provided by the responsible departments on a quarterly or other regular basis.

Step Ten Update the Capital Program

Annual updating of the capital program involves repeating Steps Two through Nine to reflect new information, policies, and proposed projects. The CIP committee should review and revise the entire program as necessary to reflect its most recent determinations of the need for new equipment, the maintenance of existing equipment, the town's social and environmental conditions, the development or revision of financial policies, and the community's financial resources. After the first year has been budgeted, the CIP committee adds one year to the capital program and updates the remainder of the plan.

APPENDICES

Appendix I	Sample Capital Improvement Program Bylaw
Appendix II	Sample Capital Improvement Budget Policy
Appendix III	Sample Capital Improvement Debt
Appendix IV	Sample Capital Budget Calendar

APPENDIX I SAMPLE CAPITAL IMPROVEMENT PROGRAM BYLAW

Section 1. The board of selectmen shall establish and appoint a committee to be known as the Capital Improvement Planning committee, composed of one member of the board of selectmen, one member of the finance committee, one member of the planning board, the school superintendent or his designee, and three residents of the town appointed by the moderator. The town accountant (or executive secretary or other administrative officer) shall be an ex officio committee member without the right to vote. The committee shall choose its own officers.

Section 2. The committee shall study proposed capital projects and improvements involving major, nonrecurring, tangible projects and assets which: 1) are purchased or undertaken at intervals of not less than five years; 2) have a useful life of at least five years; and 3) cost over \$25,000. All officers, boards, and committees, including the select board and school committee, shall, by _____ of each year, give to the committee, on forms prepared by it, information concerning all anticipated projects requiring town meeting action during the ensuing five years. The committee shall consider the relative need, impact, timing, and cost of these expenditures and the effect that each will have on the town's financial position. No appropriation shall be voted for a capital improvement requested by a department, board, or commission unless the proposed capital improvement is considered in the committee's report or the committee shall first have submitted a report to the board of selectmen explaining the omission.

Section 3. The committee shall prepare an annual report recommending a capital improvement budget for the next fiscal year and a capital improvement program with recommended capital improvements for the following four fiscal years. The report shall be submitted to the board of selectmen for its consideration and approval. The board shall submit its approved capital budget to the annual town meeting for adoption by the town.

Section 4. Such capital improvement program, after its adoption, shall permit the expenditure on projects included therein of sums from departmental budgets for surveys, architectural or engineering advice, options, or appraisals. No such expenditure shall be incurred on projects that have not been so approved by the town through the appropriation of sums in the current year or in prior years or for preliminary planning for projects to be undertaken more than five years in the future.

Section 5. The committee's report and the selectmen's recommended capital budget shall be published and made available in a manner consistent with the distribution of the finance committee report. The committee shall deposit its original report with the town clerk.

APPENDIX II SAMPLE CAPITAL IMPROVEMENT BUDGET POLICY

- The town will make all capital improvements in accordance with an adopted capital improvement program.
- The town will develop a multiyear plan for capital improvements and update it annually.
- The town will maintain all its assets at a level adequate to protect the town's capital investment and to minimize future maintenance and replacement costs.
- The town will enact an annual capital budget based on the multiyear capital improvement plan. Future capital expenditures necessitated by changes in population, real estate development, or economic base will be calculated and included in capital budget projections.
- The town, as part of its capital planning process, will project its equipment replacement and maintenance needs for the next several years and will update this projection each year. From this projection, a maintenance and replacement schedule will be developed and followed.
- The town will coordinate development of the capital improvement budget with development of the operating budget. Future operating costs associated with new capital improvements will be projected and included in operating budget forecasts.
- The town will determine the least costly financing method for all new projects.
- The town will identify the estimated costs and potential funding sources for each capital project proposal before it is submitted to town meeting for approval.
- The town will use intergovernmental assistance to finance only those capital improvements that are consistent with the capital improvement plan and priorities and whose operating and maintenance costs have been included in operating budget forecasts.

APPENDIX III SAMPLE CAPITAL IMPROVEMENT DEBT POLICY

- The town will confine long-term borrowing to capital improvements or projects that cannot be financed from current revenues.
- When the town finances capital projects by issuing bonds, it will pay back the bonds within a period not to exceed the expected useful life of the project.
- On all debt-financed projects, the town will make a down payment of at least _____ percent of the total project cost from current revenues.
- Total debt service for general obligation debt will not exceed _____ percent of total annual locally generated operating revenue.
- Total general obligation debt will not exceed that provided in the state statutes.
- Where possible, the town will use special assessment, revenues, or other self-supporting bonds, instead of general obligation bonds.
- The town will not use long-term debt for current operations.
- The town will retire bond anticipation debt within six months after completion of the project.
- The town will maintain good communications with bond rating agencies about its financial condition. The town will follow a policy of full disclosure on every financial report and bond prospectus.

APPENDIX IV SAMPLE CAPITAL IMPROVEMENT BUDGET CALENDAR

August	<p>Town administrator distributes capital manual and capital budgeting guidelines.</p> <p>Departments begin considering their capital needs for the upcoming fiscal year.</p> <p>Complete the annual update of capital asset inventory (buildings and equipment).</p>
November - January	<p>Departments submit capital projects to town administrator, who compiles them into a comprehensive capital package.</p> <p>Capital package given to Capital Improvement Planning (CIP) committee for review.</p> <p>CIP committee meets with department heads, provides feedback, and requests clarification. Department heads revise submissions as necessary.</p> <p>Hold joint town/school budget meeting. Present revenue and expenditure projections, free cash estimate, and overview of prospective capital needs.</p>
Feburary	<p>CIP committee submits capital budget and multiyear plan to selectmen via town administrator.</p> <p>Town administrator updates revenue and expenditure projections with latest data and revises financing plan based on updated revenue projections.</p>
March	<p>Town administrator finalizes proposed capital budget and presents it to the selectmen for approval.</p>
April	<p>Board of selectmen forwards capital and operating budgets to finance committee for review.</p> <p>Finance committee reviews capital and operating budgets and meets with department heads as necessary.</p> <p>Finance committee finalizes its budget recommendations.</p> <p>Selectmen post town meeting warrant.</p>
May	<p>Town meeting</p>



MISCELLANEOUS (UNTIMED)

9: GeoInsight Report on environmental conditions

REQUESTOR SECTION

Date of request:

Requested by: Patty Golden

Formal Title: Discussion regarding GeoInsight Report on environmental conditions (cont. from 1/9 meeting)

Recommendations/Suggested Motion/Vote: Discussion regarding GeoInsight Report on environmental conditions (cont. from 1/9 meeting)

Background Information:
attached report

Financial impact expected:

Approximate agenda time requested:

Representative(s) expected to attend meeting:

Review:

Patty Golden	Pending
Melissa Murphy-Rodrigues	Pending
Barbara Saint Andre	Pending
Robert C. Haarde	Pending
Board of Selectmen	Pending

01/23/2018 7:30 PM

To see if the Town will vote to transfer to the Board of Selectmen for the purpose of conveying, and authorize the Board of Selectmen to convey the parcel of Town Land at the Melone property off North Road, which is currently the site of the town's gravel pit, on the terms and conditions established by the Board Selectmen, said real estate disposition to be made in compliance with General Law Chapter 30B to the extent applicable, and further to authorize the Board of Selectmen and other Town Officials to take all actions to carry out this Article, or act on anything relative thereto.



Environmental Strategy & Engineering

DRAFT

January 9, 2018

GeoInsight Project 7877-001

William Murphy, Director
Town of Sudbury
Board of Health
275 Old Lancaster Road
Sudbury, MA 01776

Re: Focused Subsurface Investigation
Melone Property
North Road
Sudbury, Massachusetts

Dear Mr. Murphy:

GeoInsight, Inc. (GeoInsight) is pleased to provide this Focused Subsurface Investigation Report (the Report) for the Melone property located on North Road in Sudbury, Massachusetts (the Property). The Report was completed in general accordance with our Scope of Work for Focused Subsurface Investigation (SOW) dated October 12, 2017. The Report summarizes the results of subsurface investigation activities conducted at the Property in November and December 2017.

BACKGROUND

The Property consists of an approximately 46.6-acre irregularly shaped parcel purchased by the Town of Sudbury (the Town) in 1990. The central and southwest portions of the Property are located in Sudbury. The northeast portion of the Property is located in the neighboring town of Concord. The properties to the west and northwest are the location of the former Sperry Rand/Unisys facility which is a documented Commonwealth of Massachusetts hazardous materials release site. The Property is contiguous with an approximately 6.9-acre parcel of land to the east that is owned by the Sudbury Water District. The primary access to the Melone Property is through the Sudbury Water District parcel.

GeoInsight was retained by the Town to conduct an environmental data review associated with the Melone Property. The results of the data review were presented to the Town in a Technical Memorandum dated June 9, 2016. The Technical Memorandum provided the Town with a general summary of the Sperry/Unisys Site, including a summary of constituents of concern (COCs) released, environmental media and areas impacted, and remedial activities. The memorandum also included summary information associated with Sudbury Water District and

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DRAFT

Town of Concord municipal water supply wells that are located near the Property. The Technical Memorandum also included redevelopment considerations to assist the Town in evaluating Property reuse options.

SCOPE OF WORK

The SOW was based upon information obtained during our focused review of conditions associated with the Sperry/Unisys Site, possible environmental considerations associated with future redevelopment of the Property, and discussions with representatives of the Town. We identified the following possible environmental considerations associated with future redevelopment of the Property.

Soil Related:

- The non-gravel-mined western portion of the Melone Property was historically occupied by an orchard. Shallow soil located in this portion of the property may contain residues from historical application of pesticides/herbicides.

Groundwater Related:

- There are no historical or current data for groundwater at the Melone Property. Available information suggests that impacts associated with the Sperry/Unisys Site Gravel Pit Area plume extended onto the north border and possibly the north portion of the Melone Property (i.e., the portion located in Concord). Because of their location, topography, and presence of wetlands, the areas that may have been historically impacted by the Gravel Pit Area plume are not likely the portions of the Melone Property to be considered for redevelopment.
- Available information suggests that impacts associated with the Sperry/Unisys Leach Field Area plume may extend onto the southwest and southern portions of the Melone Property.
- Historical chlorinated solvents that were detected in samples of deep overburden and shallow bedrock groundwater near Sudbury Water District Well No. 5 appeared to extend northward onto the Sudbury Water District land that abuts the east side of the Melone Property. The extent of these impacts was not delineated.

Subsurface investigation activities performed on properties near the Melone Property indicate that soils consist of sand and gravel on top of a thin layer of glacial till and then bedrock. Depth to bedrock is variable, but is generally within 20 to 50 feet of the ground surface. Depth to water varies depending upon topography, but is generally within 5 to 10 feet of the ground surface.

The southern portion of the Property that abuts North Road and the southwest conservation portion of the Property are heavily forested and are characterized by significant topographical



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relief. Therefore, the SOW focused the groundwater characterization activities focused on the more readily accessible central and north portions of the Property.

SCOPE OF WORK

The following tasks were completed as part of the focused subsurface investigation at the Property.

DIG-SAFE ACTIVITIES

On November 21, 2017, GeoInsight conducted a Property visit to pre-mark the locations of proposed soil borings at the Property, and to look for and evaluate the presence/condition of historical monitoring wells that had previously been installed near the Property. GeoInsight identified two pre-existing monitoring wells (MW-2 and monitoring well cluster 91-S8 and 91-S9). Monitoring well MW-2 was installed in 1989 near the southwest corner of the Sudbury Water District property, adjacent to the Wagner property, as part of a subsurface investigation to evaluate chlorinated solvent impacts in Sudbury Well No. 5. Monitoring well cluster 91-S8 and 91-S9 was installed in 1991 off-Property to the southeast of the Sudbury Water District property as part of historical investigations for the Sperry/Unisys Site. The locations of these wells are indicated on Figure 2. Other near-Property historical monitoring wells were not found and are presumed destroyed.

IN SITU GROUNDWATER SAMPLING

On November 30 and December 1, 2017, GeoInsight completed an in situ groundwater sampling program using a direct-push Geoprobe® drill rig and Geoprobe® SP-16 groundwater sampling system to collect shallow and deep overburden groundwater samples at the Property. The borings were advanced at locations around the perimeter of the gravel pit area and one location near the center of the gravel pit. Geoprobe® borings GP-1, GP-2, GP-5, GP-6, and GP-7 were advanced to total depths of 56, 52, 68, 56, and 62 feet below ground surface (bgs), respectively, where refusal was encountered. Shallow refusal, presumably on bedrock, was encountered in borings GP-3 and GP-4 at a depth of 12 feet bgs. Recoverable groundwater was not encountered in the overburden soils at these two locations. Bedrock outcrops were visible at the ground surface in the southwestern portion of the gravel pit area, extending from GP-3 in the south to GP-4 in the north (Figure 2).

Shallow groundwater samples were collected from borings GP-1, GP-2, GP-5, GP-6, and GP-7 near the water table, and a deep sample was collected at the anticipated overburden-till/bedrock interface (i.e., anticipated to be Geoprobe® refusal). Groundwater sample collection depths are presented on Table 1. The locations of the borings are depicted on Figure 2. Groundwater was generally encountered in the borings at depths ranging from approximately 12 feet (GP-4; at the bedrock surface) to 39 feet (GP-7) bgs.

In situ groundwater samples were collected from the borings using a peristaltic pump and dedicated polyethylene tubing (all locations except GP-7) or dedicated polyethylene tubing



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and a check valve (location GP-7). The samples were delivered under chain of custody to Eurofins Spectrum Analytical of Agawam, Massachusetts and analyzed for volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260. In addition, the deep groundwater samples from borings GP-2, GP-6, and GP-7 were also analyzed for 1,4-dioxane using USEPA Method 8270 and Selective Ion Monitoring (SIM).

VOCs and 1,4-dioxane were not detected in the samples at concentrations above laboratory reporting limits. Groundwater analytical data are summarized on Table 1. A copy of the laboratory analytical report is attached.

On December 6, 2017, at the request of the Town, GeoInsight collected a groundwater sample from historical monitoring well MW-2 using a peristaltic pump and dedicated polyethylene tubing. Monitoring well MW-2 was constructed of 40 feet of 1.5-inch screen set at a depth of 65 feet bgs. At the time we collected the groundwater sample the screen had apparently silted-in to a depth of approximately 52 feet bgs. The depth to water in monitoring well MW-2 on December 6, 2017 was 24.51 feet bgs. The groundwater sample was collected at a depth of approximately 50 feet bgs.

The sample was delivered under chain of custody to Eurofins Spectrum Analytical and analyzed for VOCs by USEPA Method 8260. VOCs were not detected in the sample at concentrations above laboratory reporting limits. Groundwater analytical data are summarized on Table 1. A copy of the laboratory analytical report is attached.

SHALLOW SOIL SAMPLING

On November 30, 2017, GeoInsight collected six shallow soil samples (SS-1 to SS-6) at depths of up to 2 feet bgs in the upland unmined area in the western portion of the Property to evaluate whether residual pesticides/herbicides are present in shallow soil. The samples were collected using a stainless-steel hand auger and composited in the field in a stainless-steel container. The sampling equipment was decontaminated between each sampling location. Two additional soil samples (SS-7 and SS-8) were collected from the floor of the gravel pit area. Soil samples SS-1 to SS-8 were analyzed for total arsenic (a common constituent of historical pesticides/herbicides) by USEPA Method 6010C. Soil samples SS-1, SS-3, SS-5, and SS-7 were also analyzed for pesticides/herbicides by USEPA Methods 8081B and 8151A, respectively.

Arsenic was detected in each of the samples at concentrations ranging from 2.84 to 20.8 milligrams per kilogram (mg/kg). The concentration of arsenic detected in soil sample SS-2 (20.8 mg/kg) slightly exceeds the Massachusetts Contingency Plan (MCP) Reportable Concentration (RC) for arsenic of 20 mg/kg. Pesticides and herbicides were not detected in soil samples SS-1, SS-3, SS-5, and SS-7 at concentrations above laboratory reporting limits. Soil analytical results are summarized in Table 2.

Soil boring and soil sampling locations were identified using Global Positioning System (GPS) techniques and are depicted on Figure 2.



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SUMMARY

A summary of the results of the focused subsurface investigation is provided below:

Groundwater:

- on November 30 and December 1, 2017, a total of seven Geoprobe® borings were advanced at the Property to depths ranging from 12 to 68 feet bgs;
- Groundwater samples were collected from borings GP-1, GP-2, GP-5, GP-6, and GP-7 near the water table, and a deep sample was collected at the anticipated overburden-till/bedrock interface and analyzed for VOCs. The deep groundwater samples from borings GP-2, GP-6, and GP-7 were also analyzed for 1,4-dioxane;
- VOCs and 1,4-dioxane were not detected in the samples; and
- VOCs were not detected in the groundwater sample from historical monitoring well MW-2.

Soil:

- on November 30, 2017, GeoInsight collected six shallow soil samples (SS-1 to SS-6) at depths of up to 2 feet bgs in the upland unmined area in the western portion of the Property to evaluate whether residual pesticides/herbicides/arsenic are present in shallow soil. Two additional samples (SS-7 and SS-8) were collected from the floor of the gravel pit;
- arsenic was detected in the samples at concentrations ranging from 2.84 to 20.8 mg/kg;
- pesticides and herbicides were not detected in the soil samples; and
- the concentration of arsenic detected in soil sample SS-2 (20.8 mg/kg) slightly exceeds the MADEP RC for arsenic of 20 mg/kg.

CONCLUSIONS

VOCs were not detected in the 11 samples collected at the Property from both shallow and deep groundwater. The discrete groundwater samples were collected from the portions of the Property more likely to be developed. The groundwater conditions documented by the November/December 2017 sampling events do not represent a condition that would be an impediment to Property development.

Arsenic was detected in one shallow soil sample (SS-2) at a concentration that slightly exceeds the MCP RC for arsenic of 20 mg/kg. The sample was collected in the non-gravel-mined southwestern portion of the Melone Property that was historically occupied by an orchard. The

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presence of arsenic in soil appears to be attributable to natural geologic conditions, or the historical use of arsenic-based pesticides within the former orchard. The detection and distribution of arsenic in the six soil samples did not exhibit a distinct pattern or define a discrete release area (i.e., MCP hot spot).

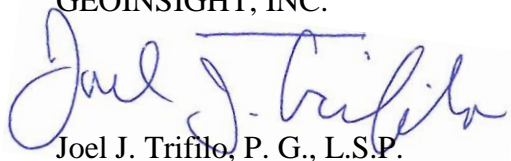
In accordance with the MCP the following conditions apply to the arsenic detected in on-Property soil and represent conditions that do not require notification to the Massachusetts Department of Environmental Protection (MADEP):

- arsenic in an area documented by the U.S. Geological Survey (USGS) or in other scientific literature as an area of elevated arsenic measured in soil or groundwater that
 - (a) is consistently present in the environment at and in the vicinity of the sampling location;
 - (b) is solely attributable to natural geologic or ecologic conditions; and
 - (c) has not been mobilized or transferred to another environmental medium or increased in concentration in an environmental medium as a result of anthropogenic activities.
- the presence of arsenic in soil resulting from the application of pesticides in a manner consistent with their labelling (i.e., potential historical orchard maintenance activities).

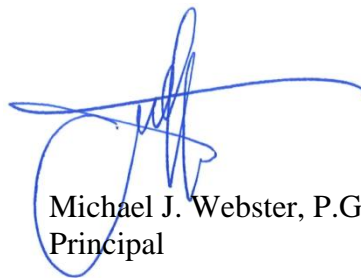
Information reviewed by GeoInsight indicates that the Property is located in close proximity to geologic areas of Massachusetts where elevated concentrations of arsenic are present in groundwater and mapped bedrock units. In addition, the concentrations of arsenic detected in Property soils are within the range of concentrations (0 to 70 mg/kg) that are considered to be consistent with natural soils by the USGS and USEPA. As such, the arsenic detected in Property soil is exempt from notification under the MCP.

If you have questions regarding the information presented in this Report or regarding conditions identified at the Melone Property, please contact Joel J. Trifilo or Michael J. Webster at (978) 679-1600.

Sincerely,
GEOINSIGHT, INC.



Joel J. Trifilo, P. G., L.S.P.
Senior Geologist



Michael J. Webster, P.G., L.S.P.
Principal

Attachments:

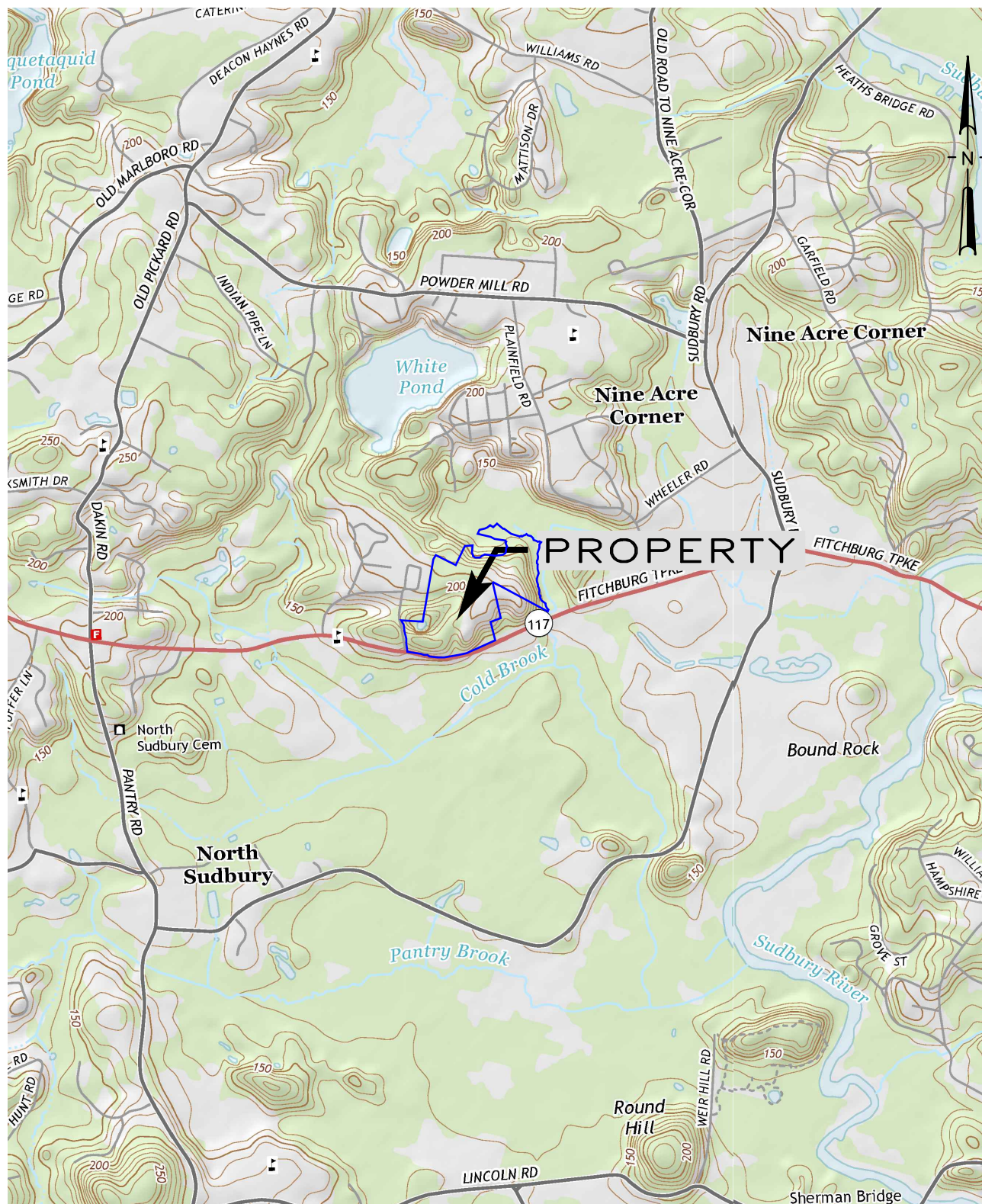
Figure 1 Property Locus

Figure 2 Property Plan

Table 1 Groundwater Analytical Results

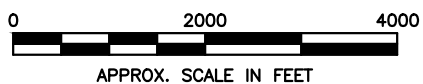
Table 2 Soil Analytical Results


Laboratory Analytical Reports



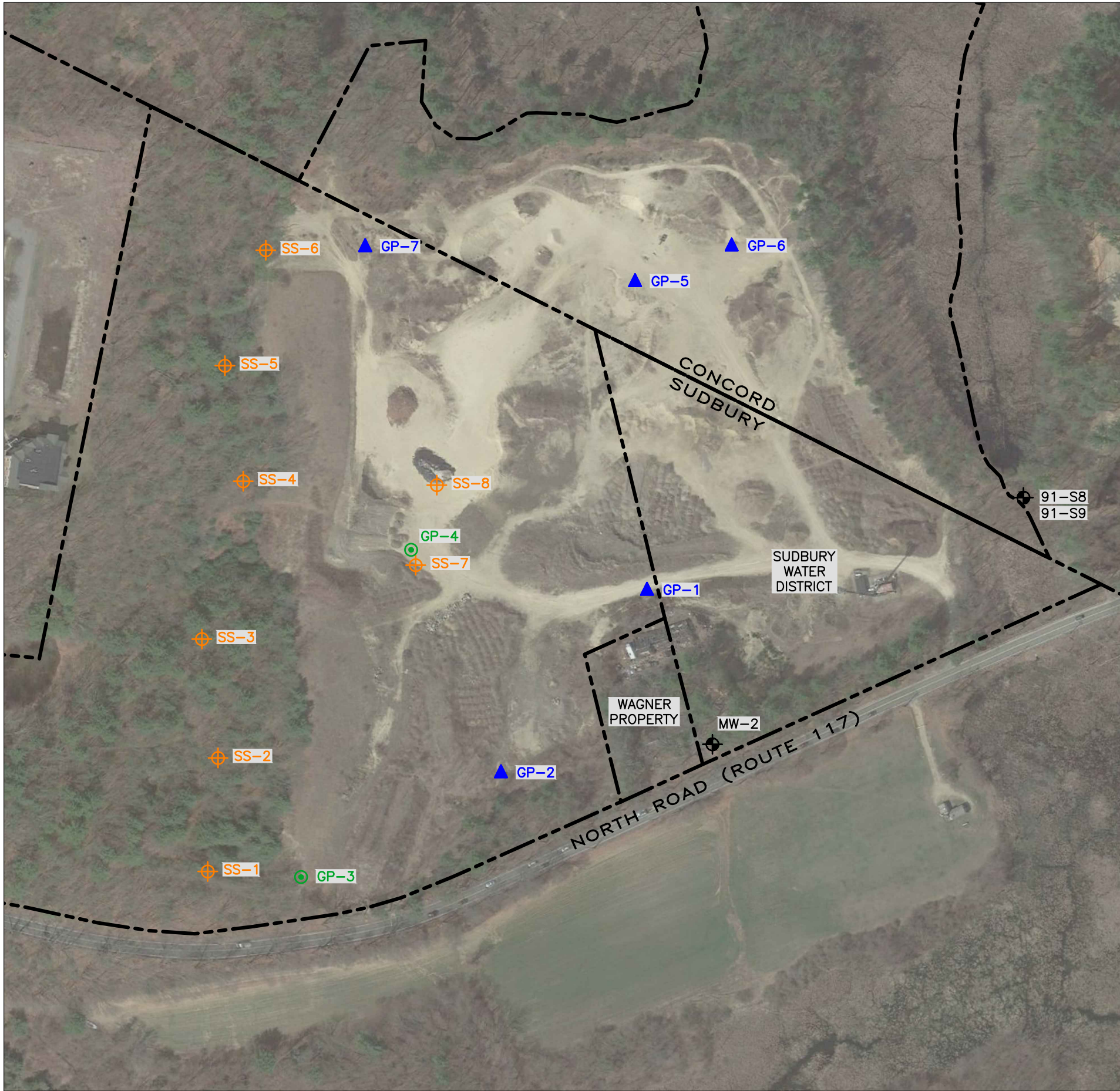
SOURCE:

USGS MAYNARD, MASSACHUSETTS
TOPOGRAPHIC QUADRANGLE 2015
CONTOUR INTERVAL: 10 FEET



CLIENT: TOWN OF SUDBURY				 GeoInsight <i>Practical in Nature</i>
PROJECT: MELONE PROPERTY, NORTH ROAD SUDBURY, MASSACHUSETTS				
TITLE: PROPERTY LOCUS				
DESIGNED: JER	DRAWN: JER	CHECKED: CAS	APPROVED: KDT	
SCALE: 1" = 2000'	DATE: 12/21/17	FILE NO.: 7877-LOCUS	PROJECT NO.: 7877-000	
FIGURE NO.: 1				

PLOT DATE: 1-8-18
FILE: C:\Users\stmckee\appdata\local\temp\AcPublish_9496\7877D001.dwg



LEGEND

- MW-2 HISTORICAL MONITORING WELL (MW-2 INSTALLED IN 1989, 91-S8 AND 91-S9 INSTALLED IN 1991)
- SS-1 SHALLOW SOIL SAMPLES
- GP-1 DISCRETE GROUNDWATER SAMPLES
- GP-3 NO SAMPLE COLLECTED DUE TO SHALLOW REFUSAL

NOTES:

1. THIS FIGURE WAS BASED UPON AN AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH DATED APRIL 14, 2017.




CLIENT: TOWN OF SUDBURY				 GeoInsight <i>Practical in Nature</i>
PROJECT: MELONE PROPERTY, NORTH ROAD SUDBURY, MASSACHUSETTS				
TITLE: PROPERTY PLAN				
DESIGNED: CAS	DRAWN: STM	CHECKED: JJT	APPROVED: JJT	FIGURE NO.: 2
SCALE: 1" = 200'	DATE: 01/08/17	FILE NO.: 7877D001	PROJECT NO.: 7877-000	

TABLE 1
GROUNDWATER ANALYTICAL DATA
MELONE PROPERTY
NORTH ROAD
SUDBURY, MASSACHUSETTS

Sample Identification:	GP-1 (56')	GP-1 (20')	GP-2 (52')*	GP-2 (29')	GP-5 (68')	GP-5 (34')	GP-6 (56')*	GP-6 (39')	GP-7 (62')*	GP-7 (48')	MW-2
Sample Depth (feet bgs):	56	20	52	29	68	34	56	39	62	48	50
Sample Date:	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	12/1/2017	12/1/2017	12/1/2017	12/1/2017	12/6/2017
Volatile Organic Compounds (VOCs) analyzed via USEPA Method 8260 were not detected.											
*1,4-Dioxane analyzed via USEPA Method 8270D SIM was not detected.											

NOTES:

1. * = Samples analyzed for 1,4-dioxane.
2. USEPA = United States Environmental Protection Agency.
3. SIM = Selected Ion Monitoring.
4. bgs = Below ground surface.

TABLE 2
SOIL ANALYTICAL DATA
MELONE PROPERTY
NORTH ROAD
SUDBURY, MASSACHUSETTS

Sample Identification:	MCP Reportable Concentrations S-1	SS-1 (0-2)*	SS-2 (0-2)	SS-3 (0-2)*	SS-4 (0-2)	SS-5 (0-2)*	SS-6 (0-2)	SS-7 (0-2)*	SS-8 (0-2)
Sample Depth (feet bgs):		0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2
Sample Date:		11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017
Pesticides analyzed via USEPA Method 8081B were not detected.									
Herbicides analyzed via USEPA Method 8151A were not detected.									
Arsenic via USEPA Method 6010C									
Arsenic	20	3.9	20.8	8.37	9.58	3.45	16	2.84	2.89

NOTES:

1. * = Samples were analyzed for pesticides/herbicides.
2. Results reported in milligrams per kilogram (mg/kg).
3. USEPA = United States Environmental Protection Agency.
4. MCP = Massachusetts Contingency Plan.
5. Bolded values exceed laboratory reporting limits.
6. Shaded values exceed MCP Reportable Concentration RCS-1.
7. bgs = Below ground surface.

☒ Final Report
☐ Revised Report

Report Date:
14-Dec-17 15:24

Laboratory Report SC42065

GeoInsight, Inc.
1 Monarch Drive, Suite 201
Littleton, MA 01460
Attn: Joel Trifilo

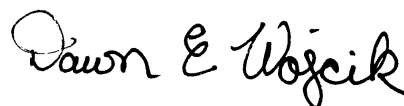
Project: Melone Property - North Rd - Sudbury, MA
Project #: 7877

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87936
Maine # MA138
New Hampshire # 2972/2538
New Jersey # MA011
New York # 11393
Pennsylvania # 68-04426/68-02924
Rhode Island # LAO00348
USDA # P330-15-00375
Vermont # VT-11393



Authorized by:
Dawn Wojcik
Laboratory Director



Eurofins Spectrum Analytical holds primary certification in the State of Massachusetts for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of Massachusetts does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 40 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Eurofins Spectrum Analytical, Inc.

Eurofins Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Eurofins Spectrum Analytical, Inc. is currently accredited for the specific method or analyte indicated. Please refer to our Quality web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Eurofins Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey, Pennsylvania and Florida. All analytical work for Volatile Organic and Air analysis is transferred to and conducted at our 830 Silver Street location (PA-68-04426).

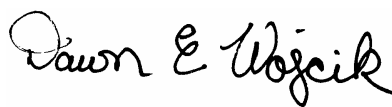
Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

Sample Summary

Work Order: SC42065
Project: Melone Property - North Rd - Sudbury, MA
Project Number: 7877

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Received</u>
SC42065-01	GP-1 (56')	Ground Water	30-Nov-17 09:55	04-Dec-17 14:20
SC42065-02	GP-1 (20')	Ground Water	30-Nov-17 10:45	04-Dec-17 14:20
SC42065-03	GP-2 (52')	Ground Water	30-Nov-17 11:45	04-Dec-17 14:20
SC42065-04	GP-2 (29')	Ground Water	30-Nov-17 12:45	04-Dec-17 14:20
SC42065-05	GP-5 (68')	Ground Water	30-Nov-17 15:55	04-Dec-17 14:20
SC42065-06	GP-5 (34')	Ground Water	30-Nov-17 16:40	04-Dec-17 14:20
SC42065-07	GP-6 (56')	Ground Water	01-Dec-17 09:12	04-Dec-17 14:20
SC42065-08	GP-6 (39')	Ground Water	01-Dec-17 10:20	04-Dec-17 14:20
SC42065-09	GP-7 (62')	Ground Water	01-Dec-17 12:25	04-Dec-17 14:20
SC42065-10	GP-7 (48')	Ground Water	01-Dec-17 13:55	04-Dec-17 14:20

MassDEP Analytical Protocol Certification Form

Laboratory Name: Eurofins Spectrum Analytical, Inc.			Project #: 7877		
Project Location: Melone Property - North Rd - Sudbury, MA			RTN:		
This form provides certifications for the following data set:			SC42065-01 through SC42065-10		
Matrices: Ground Water					
CAM Protocol					
✓ 8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
✓ 8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9012 Total Cyanide/PAC CAM VI A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B
<i>Affirmative responses to questions A through F are required for Presumptive Certainty's status</i>					
A	Were all samples received in a condition consistent with those described on the Chain of Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?				✓ Yes No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?				✓ Yes No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?				✓ Yes No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?				✓ Yes No
E	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?				Yes No Yes No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to questions A through E)?				✓ Yes No
<i>Responses to questions G, H and I below are required for Presumptive Certainty's status</i>					
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?				Yes ✓ No
Data User Note: Data that achieve Presumptive Certainty's status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40.1056 (2)(k) and WSC-07-350.					
H	Were all QC performance standards specified in the CAM protocol(s) achieved?				Yes ✓ No
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?				Yes ✓ No
<i>All negative responses are addressed in a case narrative on the cover page of this report.</i>					
<p><i>I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.</i></p> <div style="text-align: right; margin-top: 20px;">  Dawn E. Wojcik Laboratory Director Date: 12/14/2017 </div>					

CASE NARRATIVE:

Data has been reported to the RDL. This report excludes estimated concentrations detected below the RDL and above the MDL (J-Flag).

All non-detects and all results below the reporting limit are reported as "<" (less than) the reporting limit in this report.

The samples were received 2.5 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group. If method or program required MS/MSD/Dup were not performed, sufficient sample was not provided to the laboratory.

MADEP has published a list of analytical methods (CAM) which provides a series of recommended protocols for the acquisition, analysis and reporting of analytical data in support of MCP decisions. "Presumptive Certainty" can be established only for those methods published by the MADEP in the MCP CAM. The compounds and/or elements reported were specifically requested by the client on the Chain of Custody and in some cases may not include the full analyte list as defined in the method. Regulatory limits may not be achieved if specific method and/or technique was not requested on the Chain of Custody.

According to WSC-CAM 5/2009 Rev.1, Table 11 A-1, recovery for some VOC analytes have been deemed potentially difficult. Although they may still be within the recommended recovery range, a range has been set based on historical control limits.

Some target analytes which are not listed as exceptions in the Summary of CAM Reporting Limits may exceed the recommended RL based on sample initial volume or weight provided, % moisture content, or responsiveness of a particular analyte to purge and trap instrumentation.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

SW846 8260C**Calibration:**

1711046

Analyte quantified by quadratic equation type calibration.

1,2,3-Trichlorobenzene
 1,2,4-Trichlorobenzene
 1,2-Dibromo-3-chloropropane
 2-Hexanone (MBK)
 4-Methyl-2-pentanone (MIBK)
 cis-1,3-Dichloropropene
 Naphthalene
 trans-1,3-Dichloropropene
 trans-1,4-Dichloro-2-butene

SW846 8260C**Calibration:**

1711046

This affected the following samples:

1720373-BLK1
1720373-BS1
1720373-BSD1
GP-1 (20')
GP-1 (56')
GP-2 (29')
GP-2 (52')
GP-5 (34')
GP-5 (68')
GP-6 (39')
GP-6 (56')
GP-7 (48')
GP-7 (62')
S710225-ICV1
S710663-CCV1

Laboratory Control Samples:

1720373 BS/BSD

1,1,2,2-Tetrachloroethane percent recoveries (118/154) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

GP-1 (20')
GP-1 (56')
GP-2 (29')
GP-2 (52')
GP-5 (34')
GP-5 (68')
GP-6 (39')
GP-6 (56')
GP-7 (48')
GP-7 (62')

1,2,3-Trichlorobenzene percent recoveries (132/138) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

GP-1 (20')
GP-1 (56')
GP-2 (29')
GP-2 (52')
GP-5 (34')
GP-5 (68')
GP-6 (39')
GP-6 (56')
GP-7 (48')
GP-7 (62')

SW846 8260C**Laboratory Control Samples:**

1720373 BS/BSD

1,2,3-Trichloropropane percent recoveries (123/155) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

GP-1 (20')
GP-1 (56')
GP-2 (29')
GP-2 (52')
GP-5 (34')
GP-5 (68')
GP-6 (39')
GP-6 (56')
GP-7 (48')
GP-7 (62')

Bromomethane percent recoveries (62/65) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

GP-1 (20')
GP-1 (56')
GP-2 (29')
GP-2 (52')
GP-5 (34')
GP-5 (68')
GP-6 (39')
GP-6 (56')
GP-7 (48')
GP-7 (62')

Hexachlorobutadiene percent recoveries (136/125) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

GP-1 (20')
GP-1 (56')
GP-2 (29')
GP-2 (52')
GP-5 (34')
GP-5 (68')
GP-6 (39')
GP-6 (56')
GP-7 (48')
GP-7 (62')

Naphthalene percent recoveries (111/139) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

GP-1 (20')
GP-1 (56')
GP-2 (29')
GP-2 (52')
GP-5 (34')
GP-5 (68')
GP-6 (39')
GP-6 (56')
GP-7 (48')
GP-7 (62')

SW846 8260C**Laboratory Control Samples:**

1720373 BS/BSD

o-Xylene percent recoveries (112/138) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

GP-1 (20')
 GP-1 (56')
 GP-2 (29')
 GP-2 (52')
 GP-5 (34')
 GP-5 (68')
 GP-6 (39')
 GP-6 (56')
 GP-7 (48')
 GP-7 (62')

1720373 BSD

1,1,2,2-Tetrachloroethane RPD 27% (20%) is outside individual acceptance criteria.

1,2,3-Trichloropropane RPD 23% (20%) is outside individual acceptance criteria.

Naphthalene RPD 22% (20%) is outside individual acceptance criteria.

o-Xylene RPD 21% (20%) is outside individual acceptance criteria.

Styrene RPD 21% (20%) is outside individual acceptance criteria.

trans-1,4-Dichloro-2-butene RPD 22% (20%) is outside individual acceptance criteria.

Samples:

S710663-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

1,2,3-Trichloropropane (22.8%)
 Bromomethane (-38.1%)
 Chloromethane (-22.8%)
 Hexachlorobutadiene (36.1%)
 Methylene chloride (-23.9%)

Analyte percent drift is outside individual acceptance criteria (20), but within overall method allowances.

1,2,3-Trichlorobenzene (32.2%)
 1,2-Dibromo-3-chloropropane (20.6%)
 4-Isopropyltoluene (24.2%)

SW846 8260C**Samples:**

S710663-CCV1

This affected the following samples:

1720373-BLK1
1720373-BS1
1720373-BSD1
GP-1 (20')
GP-1 (56')
GP-2 (29')
GP-2 (52')
GP-5 (34')
GP-5 (68')
GP-6 (39')
GP-6 (56')
GP-7 (48')
GP-7 (62')

Sample Acceptance Check Form

Client: GeoInsight, Inc. - Littleton, MA
 Project: Melone Property - North Rd - Sudbury, MA / 7877
 Work Order: SC42065
 Sample(s) received on: 12/4/2017

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Were custody seals present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Were custody seals intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Were samples received at a temperature of $\leq 6^{\circ}\text{C}$?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples refrigerated upon transfer to laboratory representative?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were sample containers received intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples accompanied by a Chain of Custody document?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did sample container labels agree with Chain of Custody document?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples received within method-specific holding times?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Summary of Hits

Lab ID:

Client ID:

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
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No hits detected.

Please note that because there are no reporting limits associated with hazardous waste characterizations or micro analyses, this summary does not include hits from these analyses if included in this work order.

Attachment9.b: Draft Melone Property Subsurface Investigation - January 9 2018 (2630 : GeolInsight Report on environmental conditions)

Sample Identification

GP-1 (56')	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42065-01	7877	Ground Water	30-Nov-17 09:55	04-Dec-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
Volatile Organic Compounds													
<u>Volatile Organic Compounds by SW846 8260</u>													
<u>Prepared by method SW846 5030 Water MS</u>													
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 1.00		µg/l	1.00	0.53	1	SW846 8260C	07-Dec-17	08-Dec-17	GMA	1720373	
67-64-1	Acetone	< 10.0		µg/l	10.0	0.80	1	"	"	"	"	"	
107-13-1	Acrylonitrile	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
71-43-2	Benzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
108-86-1	Bromobenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-97-5	Bromochloromethane	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		µg/l	0.50	0.42	1	"	"	"	"	"	
75-25-2	Bromoform	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
74-83-9	Bromomethane	< 2.00		µg/l	2.00	0.90	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	< 2.00		µg/l	2.00	1.07	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	< 1.00		µg/l	1.00	0.41	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
75-15-0	Carbon disulfide	< 2.00		µg/l	2.00	0.41	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 1.00		µg/l	1.00	0.44	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 1.00		µg/l	1.00	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 2.00		µg/l	2.00	0.59	1	"	"	"	"	"	
67-66-3	Chloroform	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-87-3	Chloromethane	< 2.00		µg/l	2.00	0.37	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	< 2.00		µg/l	2.00	0.86	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		µg/l	0.50	0.32	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	< 0.50		µg/l	0.50	0.20	1	"	"	"	"	"	
74-95-3	Dibromomethane	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 1.00		µg/l	1.00	0.27	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	< 2.00		µg/l	2.00	0.58	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 1.00		µg/l	1.00	0.69	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	< 1.00		µg/l	1.00	0.21	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	< 1.00		µg/l	1.00	0.58	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.36	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.35	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	< 2.00		µg/l	2.00	0.53	1	"	"	"	"	"	

This laboratory report is not valid without an authorized signature on the cover page.

Sample Identification

GP-1 (56') **Client Project #** 7877 **Matrix** Ground Water **Collection Date/Time** 30-Nov-17 09:55 **Received** 04-Dec-17
 SC42065-01

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
Volatile Organic Compounds													
Volatile Organic Compounds by SW846 8260													
98-82-8	Isopropylbenzene	< 1.00		µg/l	1.00	0.36	1	SW846 8260C	07-Dec-17	08-Dec-17	GMA	1720373	
99-87-6	4-Isopropyltoluene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	< 1.00		µg/l	1.00	0.24	1	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 2.00		µg/l	2.00	0.52	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 2.00		µg/l	2.00	0.66	1	"	"	"	"	"	
91-20-3	Naphthalene	< 1.00		µg/l	1.00	0.35	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
100-42-5	Styrene	< 1.00		µg/l	1.00	0.40	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.50		µg/l	0.50	0.33	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 1.00		µg/l	1.00	0.57	1	"	"	"	"	"	
108-88-3	Toluene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
108-70-3	1,3,5-Trichlorobenzene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	< 1.00		µg/l	1.00	0.51	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 1.00		µg/l	1.00	0.50	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	< 1.00		µg/l	1.00	0.36	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	< 1.00		µg/l	1.00	0.43	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 1.00		µg/l	1.00	0.47	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 2.00		µg/l	2.00	0.38	1	"	"	"	"	"	
95-47-6	o-Xylene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	< 2.00		µg/l	2.00	1.06	1	"	"	"	"	"	
60-29-7	Ethyl ether	< 1.00		µg/l	1.00	0.37	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	< 10.0		µg/l	10.0	5.90	1	"	"	"	"	"	
123-91-1	1,4-Dioxane	< 20.0		µg/l	20.0	11.4	1	"	"	"	"	"	
110-57-6	trans-1,4-Dichloro-2-buten e	< 5.00		µg/l	5.00	0.82	1	"	"	"	"	"	
64-17-5	Ethanol	< 200		µg/l	200	30.9	1	"	"	"	"	"	

Surrogate recoveries:

460-00-4	4-Bromofluorobenzene	117			70-130 %		"	"	"	"	"	"	
2037-26-5	Toluene-d8	99			70-130 %		"	"	"	"	"	"	
17060-07-0	1,2-Dichloroethane-d4	103			70-130 %		"	"	"	"	"	"	
1868-53-7	Dibromofluoromethane	99			70-130 %		"	"	"	"	"	"	

Sample Identification

GP-1 (20')	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42065-02	7877	Ground Water	30-Nov-17 10:45	04-Dec-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
Volatile Organic Compounds													
<u>Volatile Organic Compounds by SW846 8260</u>													
<u>Prepared by method SW846 5030 Water MS</u>													
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 1.00		µg/l	1.00	0.53	1	SW846 8260C	07-Dec-17	08-Dec-17	GMA	1720373	
67-64-1	Acetone	< 10.0		µg/l	10.0	0.80	1	"	"	"	"	"	
107-13-1	Acrylonitrile	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
71-43-2	Benzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
108-86-1	Bromobenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-97-5	Bromochloromethane	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		µg/l	0.50	0.42	1	"	"	"	"	"	
75-25-2	Bromoform	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
74-83-9	Bromomethane	< 2.00		µg/l	2.00	0.90	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	< 2.00		µg/l	2.00	1.07	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	< 1.00		µg/l	1.00	0.41	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
75-15-0	Carbon disulfide	< 2.00		µg/l	2.00	0.41	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 1.00		µg/l	1.00	0.44	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 1.00		µg/l	1.00	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 2.00		µg/l	2.00	0.59	1	"	"	"	"	"	
67-66-3	Chloroform	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-87-3	Chloromethane	< 2.00		µg/l	2.00	0.37	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	< 2.00		µg/l	2.00	0.86	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		µg/l	0.50	0.32	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	< 0.50		µg/l	0.50	0.20	1	"	"	"	"	"	
74-95-3	Dibromomethane	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 1.00		µg/l	1.00	0.27	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	< 2.00		µg/l	2.00	0.58	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 1.00		µg/l	1.00	0.69	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	< 1.00		µg/l	1.00	0.21	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	< 1.00		µg/l	1.00	0.58	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.36	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.35	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	< 2.00		µg/l	2.00	0.53	1	"	"	"	"	"	

This laboratory report is not valid without an authorized signature on the cover page.

Sample Identification

GP-1 (20')	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42065-02	7877	Ground Water	30-Nov-17 10:45	04-Dec-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
Volatile Organic Compounds													
Volatile Organic Compounds by SW846 8260													
98-82-8	Isopropylbenzene	< 1.00		µg/l	1.00	0.36	1	SW846 8260C	07-Dec-17	08-Dec-17	GMA	1720373	
99-87-6	4-Isopropyltoluene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	< 1.00		µg/l	1.00	0.24	1	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 2.00		µg/l	2.00	0.52	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 2.00		µg/l	2.00	0.66	1	"	"	"	"	"	
91-20-3	Naphthalene	< 1.00		µg/l	1.00	0.35	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
100-42-5	Styrene	< 1.00		µg/l	1.00	0.40	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.50		µg/l	0.50	0.33	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 1.00		µg/l	1.00	0.57	1	"	"	"	"	"	
108-88-3	Toluene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
108-70-3	1,3,5-Trichlorobenzene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	< 1.00		µg/l	1.00	0.51	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 1.00		µg/l	1.00	0.50	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	< 1.00		µg/l	1.00	0.36	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	< 1.00		µg/l	1.00	0.43	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 1.00		µg/l	1.00	0.47	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 2.00		µg/l	2.00	0.38	1	"	"	"	"	"	
95-47-6	o-Xylene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	< 2.00		µg/l	2.00	1.06	1	"	"	"	"	"	
60-29-7	Ethyl ether	< 1.00		µg/l	1.00	0.37	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	< 10.0		µg/l	10.0	5.90	1	"	"	"	"	"	
123-91-1	1,4-Dioxane	< 20.0		µg/l	20.0	11.4	1	"	"	"	"	"	
110-57-6	trans-1,4-Dichloro-2-buten e	< 5.00		µg/l	5.00	0.82	1	"	"	"	"	"	
64-17-5	Ethanol	< 200		µg/l	200	30.9	1	"	"	"	"	"	

Surrogate recoveries:

460-00-4	4-Bromofluorobenzene	100			70-130 %		"	"	"	"	"	"	
2037-26-5	Toluene-d8	99			70-130 %		"	"	"	"	"	"	
17060-07-0	1,2-Dichloroethane-d4	107			70-130 %		"	"	"	"	"	"	
1868-53-7	Dibromofluoromethane	102			70-130 %		"	"	"	"	"	"	

Sample Identification

GP-2 (52')	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42065-03	7877	Ground Water	30-Nov-17 11:45	04-Dec-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
Volatile Organic Compounds													
<u>Volatile Organic Compounds by SW846 8260</u>													
<u>Prepared by method SW846 5030 Water MS</u>													
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 1.00		µg/l	1.00	0.53	1	SW846 8260C	07-Dec-17	08-Dec-17	GMA	1720373	
67-64-1	Acetone	< 10.0		µg/l	10.0	0.80	1	"	"	"	"	"	
107-13-1	Acrylonitrile	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
71-43-2	Benzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
108-86-1	Bromobenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-97-5	Bromochloromethane	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		µg/l	0.50	0.42	1	"	"	"	"	"	
75-25-2	Bromoform	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
74-83-9	Bromomethane	< 2.00		µg/l	2.00	0.90	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	< 2.00		µg/l	2.00	1.07	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	< 1.00		µg/l	1.00	0.41	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
75-15-0	Carbon disulfide	< 2.00		µg/l	2.00	0.41	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 1.00		µg/l	1.00	0.44	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 1.00		µg/l	1.00	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 2.00		µg/l	2.00	0.59	1	"	"	"	"	"	
67-66-3	Chloroform	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-87-3	Chloromethane	< 2.00		µg/l	2.00	0.37	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	< 2.00		µg/l	2.00	0.86	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		µg/l	0.50	0.32	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	< 0.50		µg/l	0.50	0.20	1	"	"	"	"	"	
74-95-3	Dibromomethane	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 1.00		µg/l	1.00	0.27	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	< 2.00		µg/l	2.00	0.58	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 1.00		µg/l	1.00	0.69	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	< 1.00		µg/l	1.00	0.21	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	< 1.00		µg/l	1.00	0.58	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.36	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.35	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	< 2.00		µg/l	2.00	0.53	1	"	"	"	"	"	

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Sample Identification

GP-2 (52')	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42065-03	7877	Ground Water	30-Nov-17 11:45	04-Dec-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
Volatile Organic Compounds													
<u>Volatile Organic Compounds by SW846 8260</u>													
98-82-8	Isopropylbenzene	< 1.00		µg/l	1.00	0.36	1	SW846 8260C	07-Dec-17	08-Dec-17	GMA	1720373	
99-87-6	4-Isopropyltoluene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	< 1.00		µg/l	1.00	0.24	1	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 2.00		µg/l	2.00	0.52	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 2.00		µg/l	2.00	0.66	1	"	"	"	"	"	
91-20-3	Naphthalene	< 1.00		µg/l	1.00	0.35	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
100-42-5	Styrene	< 1.00		µg/l	1.00	0.40	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.50		µg/l	0.50	0.33	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 1.00		µg/l	1.00	0.57	1	"	"	"	"	"	
108-88-3	Toluene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
108-70-3	1,3,5-Trichlorobenzene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	< 1.00		µg/l	1.00	0.51	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 1.00		µg/l	1.00	0.50	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	< 1.00		µg/l	1.00	0.36	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	< 1.00		µg/l	1.00	0.43	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 1.00		µg/l	1.00	0.47	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 2.00		µg/l	2.00	0.38	1	"	"	"	"	"	
95-47-6	o-Xylene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	< 2.00		µg/l	2.00	1.06	1	"	"	"	"	"	
60-29-7	Ethyl ether	< 1.00		µg/l	1.00	0.37	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	< 10.0		µg/l	10.0	5.90	1	"	"	"	"	"	
123-91-1	1,4-Dioxane	< 20.0		µg/l	20.0	11.4	1	"	"	"	"	"	
110-57-6	trans-1,4-Dichloro-2-buten e	< 5.00		µg/l	5.00	0.82	1	"	"	"	"	"	
64-17-5	Ethanol	< 200		µg/l	200	30.9	1	"	"	"	"	"	

Surrogate recoveries:

460-00-4	4-Bromofluorobenzene	99	70-130 %	"	"	"	"	"
2037-26-5	Toluene-d8	100	70-130 %	"	"	"	"	"
17060-07-0	1,2-Dichloroethane-d4	103	70-130 %	"	"	"	"	"
1868-53-7	Dibromofluoromethane	103	70-130 %	"	"	"	"	"

Subcontracted AnalysesSubcontracted AnalysesPrepared by method 411966-SW8

Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007

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Sample Identification

GP-2 (52')	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42065-03	7877	Ground Water	30-Nov-17 11:45	04-Dec-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
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Subcontracted AnalysesSubcontracted AnalysesPrepared by method 411966-SW8

Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007

123-91-1	1,4-dioxane	< 0.20		ug/l	0.20	0.20	1	SW8270DSIM	06-Dec-17	08-Dec-17 06:40	M-CT007	411966A	
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Surrogate recoveries:

17647-74-4	% 1,4-dioxane-d8	93			30-130 %			"	"	"	"	"	
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Attachment9.b: Draft Melone Property Subsurface Investigation - January 9 2018 (2630 : Geolnsight Report on environmental conditions)

Sample Identification

GP-2 (29')	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42065-04	7877	Ground Water	30-Nov-17 12:45	04-Dec-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
Volatile Organic Compounds													
<u>Volatile Organic Compounds by SW846 8260</u>													
<u>Prepared by method SW846 5030 Water MS</u>													
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 1.00		µg/l	1.00	0.53	1	SW846 8260C	07-Dec-17	08-Dec-17	GMA	1720373	
67-64-1	Acetone	< 10.0		µg/l	10.0	0.80	1	"	"	"	"	"	
107-13-1	Acrylonitrile	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
71-43-2	Benzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
108-86-1	Bromobenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-97-5	Bromochloromethane	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		µg/l	0.50	0.42	1	"	"	"	"	"	
75-25-2	Bromoform	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
74-83-9	Bromomethane	< 2.00		µg/l	2.00	0.90	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	< 2.00		µg/l	2.00	1.07	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	< 1.00		µg/l	1.00	0.41	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
75-15-0	Carbon disulfide	< 2.00		µg/l	2.00	0.41	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 1.00		µg/l	1.00	0.44	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 1.00		µg/l	1.00	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 2.00		µg/l	2.00	0.59	1	"	"	"	"	"	
67-66-3	Chloroform	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-87-3	Chloromethane	< 2.00		µg/l	2.00	0.37	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	< 2.00		µg/l	2.00	0.86	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		µg/l	0.50	0.32	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	< 0.50		µg/l	0.50	0.20	1	"	"	"	"	"	
74-95-3	Dibromomethane	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 1.00		µg/l	1.00	0.27	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	< 2.00		µg/l	2.00	0.58	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 1.00		µg/l	1.00	0.69	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	< 1.00		µg/l	1.00	0.21	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	< 1.00		µg/l	1.00	0.58	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.36	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.35	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	< 2.00		µg/l	2.00	0.53	1	"	"	"	"	"	

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Sample Identification

GP-2 (29') Client Project # 7877 Matrix Ground Water Collection Date/Time 30-Nov-17 12:45 Received 04-Dec-17
SC42065-04

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
Volatile Organic Compounds													
Volatile Organic Compounds by SW846 8260													
98-82-8	Isopropylbenzene	< 1.00		µg/l	1.00	0.36	1	SW846 8260C	07-Dec-17	08-Dec-17	GMA	1720373	
99-87-6	4-Isopropyltoluene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	< 1.00		µg/l	1.00	0.24	1	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 2.00		µg/l	2.00	0.52	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 2.00		µg/l	2.00	0.66	1	"	"	"	"	"	
91-20-3	Naphthalene	< 1.00		µg/l	1.00	0.35	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
100-42-5	Styrene	< 1.00		µg/l	1.00	0.40	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.50		µg/l	0.50	0.33	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 1.00		µg/l	1.00	0.57	1	"	"	"	"	"	
108-88-3	Toluene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
108-70-3	1,3,5-Trichlorobenzene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	< 1.00		µg/l	1.00	0.51	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 1.00		µg/l	1.00	0.50	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	< 1.00		µg/l	1.00	0.36	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	< 1.00		µg/l	1.00	0.43	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 1.00		µg/l	1.00	0.47	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 2.00		µg/l	2.00	0.38	1	"	"	"	"	"	
95-47-6	o-Xylene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	< 2.00		µg/l	2.00	1.06	1	"	"	"	"	"	
60-29-7	Ethyl ether	< 1.00		µg/l	1.00	0.37	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	< 10.0		µg/l	10.0	5.90	1	"	"	"	"	"	
123-91-1	1,4-Dioxane	< 20.0		µg/l	20.0	11.4	1	"	"	"	"	"	
110-57-6	trans-1,4-Dichloro-2-buten e	< 5.00		µg/l	5.00	0.82	1	"	"	"	"	"	
64-17-5	Ethanol	< 200		µg/l	200	30.9	1	"	"	"	"	"	

Surrogate recoveries:

460-00-4	4-Bromofluorobenzene	99			70-130 %		"	"	"	"	"	"	
2037-26-5	Toluene-d8	100			70-130 %		"	"	"	"	"	"	
17060-07-0	1,2-Dichloroethane-d4	106			70-130 %		"	"	"	"	"	"	
1868-53-7	Dibromofluoromethane	102			70-130 %		"	"	"	"	"	"	

Sample Identification

GP-5 (68')	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42065-05	7877	Ground Water	30-Nov-17 15:55	04-Dec-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
Volatile Organic Compounds													
<u>Volatile Organic Compounds by SW846 8260</u>													
<u>Prepared by method SW846 5030 Water MS</u>													
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 1.00		µg/l	1.00	0.53	1	SW846 8260C	07-Dec-17	08-Dec-17	GMA	1720373	
67-64-1	Acetone	< 10.0		µg/l	10.0	0.80	1	"	"	"	"	"	
107-13-1	Acrylonitrile	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
71-43-2	Benzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
108-86-1	Bromobenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-97-5	Bromochloromethane	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		µg/l	0.50	0.42	1	"	"	"	"	"	
75-25-2	Bromoform	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
74-83-9	Bromomethane	< 2.00		µg/l	2.00	0.90	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	< 2.00		µg/l	2.00	1.07	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	< 1.00		µg/l	1.00	0.41	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
75-15-0	Carbon disulfide	< 2.00		µg/l	2.00	0.41	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 1.00		µg/l	1.00	0.44	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 1.00		µg/l	1.00	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 2.00		µg/l	2.00	0.59	1	"	"	"	"	"	
67-66-3	Chloroform	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-87-3	Chloromethane	< 2.00		µg/l	2.00	0.37	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	< 2.00		µg/l	2.00	0.86	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		µg/l	0.50	0.32	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	< 0.50		µg/l	0.50	0.20	1	"	"	"	"	"	
74-95-3	Dibromomethane	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 1.00		µg/l	1.00	0.27	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	< 2.00		µg/l	2.00	0.58	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 1.00		µg/l	1.00	0.69	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	< 1.00		µg/l	1.00	0.21	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	< 1.00		µg/l	1.00	0.58	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.36	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.35	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	< 2.00		µg/l	2.00	0.53	1	"	"	"	"	"	

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Sample Identification

GP-5 (68') **Client Project #** 7877 **Matrix** Ground Water **Collection Date/Time** 30-Nov-17 15:55 **Received** 04-Dec-17
 SC42065-05

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
Volatile Organic Compounds													
Volatile Organic Compounds by SW846 8260													
98-82-8	Isopropylbenzene	< 1.00		µg/l	1.00	0.36	1	SW846 8260C	07-Dec-17	08-Dec-17	GMA	1720373	
99-87-6	4-Isopropyltoluene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	< 1.00		µg/l	1.00	0.24	1	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 2.00		µg/l	2.00	0.52	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 2.00		µg/l	2.00	0.66	1	"	"	"	"	"	
91-20-3	Naphthalene	< 1.00		µg/l	1.00	0.35	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
100-42-5	Styrene	< 1.00		µg/l	1.00	0.40	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.50		µg/l	0.50	0.33	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 1.00		µg/l	1.00	0.57	1	"	"	"	"	"	
108-88-3	Toluene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
108-70-3	1,3,5-Trichlorobenzene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	< 1.00		µg/l	1.00	0.51	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 1.00		µg/l	1.00	0.50	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	< 1.00		µg/l	1.00	0.36	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	< 1.00		µg/l	1.00	0.43	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 1.00		µg/l	1.00	0.47	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 2.00		µg/l	2.00	0.38	1	"	"	"	"	"	
95-47-6	o-Xylene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	< 2.00		µg/l	2.00	1.06	1	"	"	"	"	"	
60-29-7	Ethyl ether	< 1.00		µg/l	1.00	0.37	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	< 10.0		µg/l	10.0	5.90	1	"	"	"	"	"	
123-91-1	1,4-Dioxane	< 20.0		µg/l	20.0	11.4	1	"	"	"	"	"	
110-57-6	trans-1,4-Dichloro-2-buten e	< 5.00		µg/l	5.00	0.82	1	"	"	"	"	"	
64-17-5	Ethanol	< 200		µg/l	200	30.9	1	"	"	"	"	"	

Surrogate recoveries:

460-00-4	4-Bromofluorobenzene	120			70-130 %		"	"	"	"	"	"	
2037-26-5	Toluene-d8	101			70-130 %		"	"	"	"	"	"	
17060-07-0	1,2-Dichloroethane-d4	108			70-130 %		"	"	"	"	"	"	
1868-53-7	Dibromofluoromethane	103			70-130 %		"	"	"	"	"	"	

Sample Identification

GP-5 (34')	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42065-06	7877	Ground Water	30-Nov-17 16:40	04-Dec-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
Volatile Organic Compounds													
<u>Volatile Organic Compounds by SW846 8260</u>													
<u>Prepared by method SW846 5030 Water MS</u>													
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 1.00		µg/l	1.00	0.53	1	SW846 8260C	07-Dec-17	08-Dec-17	GMA	1720373	
67-64-1	Acetone	< 10.0		µg/l	10.0	0.80	1	"	"	"	"	"	
107-13-1	Acrylonitrile	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
71-43-2	Benzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
108-86-1	Bromobenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-97-5	Bromochloromethane	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		µg/l	0.50	0.42	1	"	"	"	"	"	
75-25-2	Bromoform	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
74-83-9	Bromomethane	< 2.00		µg/l	2.00	0.90	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	< 2.00		µg/l	2.00	1.07	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	< 1.00		µg/l	1.00	0.41	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
75-15-0	Carbon disulfide	< 2.00		µg/l	2.00	0.41	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 1.00		µg/l	1.00	0.44	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 1.00		µg/l	1.00	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 2.00		µg/l	2.00	0.59	1	"	"	"	"	"	
67-66-3	Chloroform	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-87-3	Chloromethane	< 2.00		µg/l	2.00	0.37	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	< 2.00		µg/l	2.00	0.86	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		µg/l	0.50	0.32	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	< 0.50		µg/l	0.50	0.20	1	"	"	"	"	"	
74-95-3	Dibromomethane	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 1.00		µg/l	1.00	0.27	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	< 2.00		µg/l	2.00	0.58	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 1.00		µg/l	1.00	0.69	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	< 1.00		µg/l	1.00	0.21	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	< 1.00		µg/l	1.00	0.58	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.36	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.35	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	< 2.00		µg/l	2.00	0.53	1	"	"	"	"	"	

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Sample Identification

GP-5 (34')	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42065-06	7877	Ground Water	30-Nov-17 16:40	04-Dec-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
Volatile Organic Compounds													
Volatile Organic Compounds by SW846 8260													
98-82-8	Isopropylbenzene	< 1.00		µg/l	1.00	0.36	1	SW846 8260C	07-Dec-17	08-Dec-17	GMA	1720373	
99-87-6	4-Isopropyltoluene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	< 1.00		µg/l	1.00	0.24	1	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 2.00		µg/l	2.00	0.52	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 2.00		µg/l	2.00	0.66	1	"	"	"	"	"	
91-20-3	Naphthalene	< 1.00		µg/l	1.00	0.35	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
100-42-5	Styrene	< 1.00		µg/l	1.00	0.40	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.50		µg/l	0.50	0.33	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 1.00		µg/l	1.00	0.57	1	"	"	"	"	"	
108-88-3	Toluene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
108-70-3	1,3,5-Trichlorobenzene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	< 1.00		µg/l	1.00	0.51	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 1.00		µg/l	1.00	0.50	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	< 1.00		µg/l	1.00	0.36	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	< 1.00		µg/l	1.00	0.43	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 1.00		µg/l	1.00	0.47	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 2.00		µg/l	2.00	0.38	1	"	"	"	"	"	
95-47-6	o-Xylene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	< 2.00		µg/l	2.00	1.06	1	"	"	"	"	"	
60-29-7	Ethyl ether	< 1.00		µg/l	1.00	0.37	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	< 10.0		µg/l	10.0	5.90	1	"	"	"	"	"	
123-91-1	1,4-Dioxane	< 20.0		µg/l	20.0	11.4	1	"	"	"	"	"	
110-57-6	trans-1,4-Dichloro-2-buten e	< 5.00		µg/l	5.00	0.82	1	"	"	"	"	"	
64-17-5	Ethanol	< 200		µg/l	200	30.9	1	"	"	"	"	"	

Surrogate recoveries:

460-00-4	4-Bromofluorobenzene	99			70-130 %		"	"	"	"	"	"	
2037-26-5	Toluene-d8	99			70-130 %		"	"	"	"	"	"	
17060-07-0	1,2-Dichloroethane-d4	109			70-130 %		"	"	"	"	"	"	
1868-53-7	Dibromofluoromethane	103			70-130 %		"	"	"	"	"	"	

Sample Identification

GP-6 (56') Client Project # 7877 Matrix Ground Water Collection Date/Time 01-Dec-17 09:12 Received 04-Dec-17
SC42065-07

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
Volatile Organic Compounds													
<u>Volatile Organic Compounds by SW846 8260</u>													
<u>Prepared by method SW846 5030 Water MS</u>													
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 1.00		µg/l	1.00	0.53	1	SW846 8260C	07-Dec-17	08-Dec-17	GMA	1720373	
67-64-1	Acetone	< 10.0		µg/l	10.0	0.80	1	"	"	"	"	"	
107-13-1	Acrylonitrile	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
71-43-2	Benzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
108-86-1	Bromobenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-97-5	Bromochloromethane	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		µg/l	0.50	0.42	1	"	"	"	"	"	
75-25-2	Bromoform	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
74-83-9	Bromomethane	< 2.00		µg/l	2.00	0.90	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	< 2.00		µg/l	2.00	1.07	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	< 1.00		µg/l	1.00	0.41	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
75-15-0	Carbon disulfide	< 2.00		µg/l	2.00	0.41	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 1.00		µg/l	1.00	0.44	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 1.00		µg/l	1.00	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 2.00		µg/l	2.00	0.59	1	"	"	"	"	"	
67-66-3	Chloroform	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-87-3	Chloromethane	< 2.00		µg/l	2.00	0.37	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	< 2.00		µg/l	2.00	0.86	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		µg/l	0.50	0.32	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	< 0.50		µg/l	0.50	0.20	1	"	"	"	"	"	
74-95-3	Dibromomethane	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 1.00		µg/l	1.00	0.27	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	< 2.00		µg/l	2.00	0.58	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 1.00		µg/l	1.00	0.69	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	< 1.00		µg/l	1.00	0.21	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	< 1.00		µg/l	1.00	0.58	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.36	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.35	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	< 2.00		µg/l	2.00	0.53	1	"	"	"	"	"	

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Sample Identification

GP-6 (56')	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42065-07	7877	Ground Water	01-Dec-17 09:12	04-Dec-17

<i>CAS No.</i>	<i>Analyte(s)</i>	<i>Result</i>	<i>Flag</i>	<i>Units</i>	<i>*RDL</i>	<i>MDL</i>	<i>Dilution</i>	<i>Method Ref.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Analyst</i>	<i>Batch</i>	<i>C</i>
Volatile Organic Compounds													
<u>Volatile Organic Compounds by SW846 8260</u>													
98-82-8	Isopropylbenzene	< 1.00		µg/l	1.00	0.36	1	SW846 8260C	07-Dec-17	08-Dec-17	GMA	1720373	
99-87-6	4-Isopropyltoluene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	< 1.00		µg/l	1.00	0.24	1	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 2.00		µg/l	2.00	0.52	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 2.00		µg/l	2.00	0.66	1	"	"	"	"	"	
91-20-3	Naphthalene	< 1.00		µg/l	1.00	0.35	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
100-42-5	Styrene	< 1.00		µg/l	1.00	0.40	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.50		µg/l	0.50	0.33	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 1.00		µg/l	1.00	0.57	1	"	"	"	"	"	
108-88-3	Toluene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
108-70-3	1,3,5-Trichlorobenzene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	< 1.00		µg/l	1.00	0.51	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 1.00		µg/l	1.00	0.50	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	< 1.00		µg/l	1.00	0.36	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	< 1.00		µg/l	1.00	0.43	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 1.00		µg/l	1.00	0.47	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 2.00		µg/l	2.00	0.38	1	"	"	"	"	"	
95-47-6	o-Xylene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	< 2.00		µg/l	2.00	1.06	1	"	"	"	"	"	
60-29-7	Ethyl ether	< 1.00		µg/l	1.00	0.37	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	< 10.0		µg/l	10.0	5.90	1	"	"	"	"	"	
123-91-1	1,4-Dioxane	< 20.0		µg/l	20.0	11.4	1	"	"	"	"	"	
110-57-6	trans-1,4-Dichloro-2-buten e	< 5.00		µg/l	5.00	0.82	1	"	"	"	"	"	
64-17-5	Ethanol	< 200		µg/l	200	30.9	1	"	"	"	"	"	

Surrogate recoveries:

460-00-4	4-Bromofluorobenzene	101			70-130 %		"	"	"	"	"	"	
2037-26-5	Toluene-d8	100			70-130 %		"	"	"	"	"	"	
17060-07-0	1,2-Dichloroethane-d4	107			70-130 %		"	"	"	"	"	"	
1868-53-7	Dibromofluoromethane	100			70-130 %		"	"	"	"	"	"	

Subcontracted AnalysesSubcontracted AnalysesPrepared by method 411966-SW8

Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007

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Sample Identification

GP-6 (56')	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42065-07	7877	Ground Water	01-Dec-17 09:12	04-Dec-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
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Subcontracted AnalysesSubcontracted AnalysesPrepared by method 411966-SW8*Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007*

123-91-1	1,4-dioxane	< 0.20		ug/l	0.20	0.20	1	SW8270DSIM	06-Dec-17	08-Dec-17 18:04	M-CT007	411966A	
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Surrogate recoveries:

17647-74-4	% 1,4-dioxane-d8	85			30-130 %			"	"	"	"	"	
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Sample Identification

GP-6 (39') Client Project # 7877 Matrix Ground Water Collection Date/Time 01-Dec-17 10:20 Received 04-Dec-17
SC42065-08

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
Volatile Organic Compounds													
<u>Volatile Organic Compounds by SW846 8260</u>													
<u>Prepared by method SW846 5030 Water MS</u>													
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 1.00		µg/l	1.00	0.53	1	SW846 8260C	07-Dec-17	08-Dec-17	GMA	1720373	
67-64-1	Acetone	< 10.0		µg/l	10.0	0.80	1	"	"	"	"	"	
107-13-1	Acrylonitrile	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
71-43-2	Benzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
108-86-1	Bromobenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-97-5	Bromochloromethane	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		µg/l	0.50	0.42	1	"	"	"	"	"	
75-25-2	Bromoform	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
74-83-9	Bromomethane	< 2.00		µg/l	2.00	0.90	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	< 2.00		µg/l	2.00	1.07	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	< 1.00		µg/l	1.00	0.41	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
75-15-0	Carbon disulfide	< 2.00		µg/l	2.00	0.41	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 1.00		µg/l	1.00	0.44	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 1.00		µg/l	1.00	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 2.00		µg/l	2.00	0.59	1	"	"	"	"	"	
67-66-3	Chloroform	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-87-3	Chloromethane	< 2.00		µg/l	2.00	0.37	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	< 2.00		µg/l	2.00	0.86	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		µg/l	0.50	0.32	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	< 0.50		µg/l	0.50	0.20	1	"	"	"	"	"	
74-95-3	Dibromomethane	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 1.00		µg/l	1.00	0.27	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	< 2.00		µg/l	2.00	0.58	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 1.00		µg/l	1.00	0.69	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	< 1.00		µg/l	1.00	0.21	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	< 1.00		µg/l	1.00	0.58	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.36	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.35	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	< 2.00		µg/l	2.00	0.53	1	"	"	"	"	"	

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Sample Identification

GP-6 (39') Client Project # 7877 Matrix Ground Water Collection Date/Time 01-Dec-17 10:20 Received 04-Dec-17
SC42065-08

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
Volatile Organic Compounds													
Volatile Organic Compounds by SW846 8260													
98-82-8	Isopropylbenzene	< 1.00		µg/l	1.00	0.36	1	SW846 8260C	07-Dec-17	08-Dec-17	GMA	1720373	
99-87-6	4-Isopropyltoluene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	< 1.00		µg/l	1.00	0.24	1	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 2.00		µg/l	2.00	0.52	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 2.00		µg/l	2.00	0.66	1	"	"	"	"	"	
91-20-3	Naphthalene	< 1.00		µg/l	1.00	0.35	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
100-42-5	Styrene	< 1.00		µg/l	1.00	0.40	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.50		µg/l	0.50	0.33	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 1.00		µg/l	1.00	0.57	1	"	"	"	"	"	
108-88-3	Toluene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
108-70-3	1,3,5-Trichlorobenzene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	< 1.00		µg/l	1.00	0.51	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 1.00		µg/l	1.00	0.50	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	< 1.00		µg/l	1.00	0.36	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	< 1.00		µg/l	1.00	0.43	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 1.00		µg/l	1.00	0.47	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 2.00		µg/l	2.00	0.38	1	"	"	"	"	"	
95-47-6	o-Xylene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	< 2.00		µg/l	2.00	1.06	1	"	"	"	"	"	
60-29-7	Ethyl ether	< 1.00		µg/l	1.00	0.37	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	< 10.0		µg/l	10.0	5.90	1	"	"	"	"	"	
123-91-1	1,4-Dioxane	< 20.0		µg/l	20.0	11.4	1	"	"	"	"	"	
110-57-6	trans-1,4-Dichloro-2-buten e	< 5.00		µg/l	5.00	0.82	1	"	"	"	"	"	
64-17-5	Ethanol	< 200		µg/l	200	30.9	1	"	"	"	"	"	

Surrogate recoveries:

460-00-4	4-Bromofluorobenzene	122			70-130 %		"	"	"	"	"	"	
2037-26-5	Toluene-d8	99			70-130 %		"	"	"	"	"	"	
17060-07-0	1,2-Dichloroethane-d4	106			70-130 %		"	"	"	"	"	"	
1868-53-7	Dibromofluoromethane	101			70-130 %		"	"	"	"	"	"	

Sample Identification

GP-7 (62')	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42065-09	7877	Ground Water	01-Dec-17 12:25	04-Dec-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
Volatile Organic Compounds													
<u>Volatile Organic Compounds by SW846 8260</u>													
<u>Prepared by method SW846 5030 Water MS</u>													
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 1.00		µg/l	1.00	0.53	1	SW846 8260C	07-Dec-17	08-Dec-17	GMA	1720373	
67-64-1	Acetone	< 10.0		µg/l	10.0	0.80	1	"	"	"	"	"	
107-13-1	Acrylonitrile	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
71-43-2	Benzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
108-86-1	Bromobenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-97-5	Bromochloromethane	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		µg/l	0.50	0.42	1	"	"	"	"	"	
75-25-2	Bromoform	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
74-83-9	Bromomethane	< 2.00		µg/l	2.00	0.90	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	< 2.00		µg/l	2.00	1.07	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	< 1.00		µg/l	1.00	0.41	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
75-15-0	Carbon disulfide	< 2.00		µg/l	2.00	0.41	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 1.00		µg/l	1.00	0.44	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 1.00		µg/l	1.00	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 2.00		µg/l	2.00	0.59	1	"	"	"	"	"	
67-66-3	Chloroform	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-87-3	Chloromethane	< 2.00		µg/l	2.00	0.37	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	< 2.00		µg/l	2.00	0.86	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		µg/l	0.50	0.32	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	< 0.50		µg/l	0.50	0.20	1	"	"	"	"	"	
74-95-3	Dibromomethane	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 1.00		µg/l	1.00	0.27	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	< 2.00		µg/l	2.00	0.58	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 1.00		µg/l	1.00	0.69	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	< 1.00		µg/l	1.00	0.21	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	< 1.00		µg/l	1.00	0.58	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.36	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.35	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	< 2.00		µg/l	2.00	0.53	1	"	"	"	"	"	

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Sample Identification

GP-7 (62') Client Project # 7877 Matrix Ground Water Collection Date/Time 01-Dec-17 12:25 Received 04-Dec-17
SC42065-09

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
Volatile Organic Compounds													
<u>Volatile Organic Compounds by SW846 8260</u>													
98-82-8	Isopropylbenzene	< 1.00		µg/l	1.00	0.36	1	SW846 8260C	07-Dec-17	08-Dec-17	GMA	1720373	
99-87-6	4-Isopropyltoluene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	< 1.00		µg/l	1.00	0.24	1	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 2.00		µg/l	2.00	0.52	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 2.00		µg/l	2.00	0.66	1	"	"	"	"	"	
91-20-3	Naphthalene	< 1.00		µg/l	1.00	0.35	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
100-42-5	Styrene	< 1.00		µg/l	1.00	0.40	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.50		µg/l	0.50	0.33	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 1.00		µg/l	1.00	0.57	1	"	"	"	"	"	
108-88-3	Toluene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
108-70-3	1,3,5-Trichlorobenzene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	< 1.00		µg/l	1.00	0.51	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 1.00		µg/l	1.00	0.50	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	< 1.00		µg/l	1.00	0.36	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	< 1.00		µg/l	1.00	0.43	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 1.00		µg/l	1.00	0.47	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 2.00		µg/l	2.00	0.38	1	"	"	"	"	"	
95-47-6	o-Xylene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	< 2.00		µg/l	2.00	1.06	1	"	"	"	"	"	
60-29-7	Ethyl ether	< 1.00		µg/l	1.00	0.37	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	< 10.0		µg/l	10.0	5.90	1	"	"	"	"	"	
123-91-1	1,4-Dioxane	< 20.0		µg/l	20.0	11.4	1	"	"	"	"	"	
110-57-6	trans-1,4-Dichloro-2-buten e	< 5.00		µg/l	5.00	0.82	1	"	"	"	"	"	
64-17-5	Ethanol	< 200		µg/l	200	30.9	1	"	"	"	"	"	

Surrogate recoveries:

460-00-4	4-Bromofluorobenzene	99			70-130 %		"	"	"	"	"	"	
2037-26-5	Toluene-d8	99			70-130 %		"	"	"	"	"	"	
17060-07-0	1,2-Dichloroethane-d4	108			70-130 %		"	"	"	"	"	"	
1868-53-7	Dibromofluoromethane	102			70-130 %		"	"	"	"	"	"	

Subcontracted AnalysesSubcontracted AnalysesPrepared by method 411966-SW8

Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007

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Sample Identification

GP-7 (62')	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42065-09	7877	Ground Water	01-Dec-17 12:25	04-Dec-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
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Subcontracted AnalysesSubcontracted AnalysesPrepared by method 411966-SW8*Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007*

123-91-1	1,4-dioxane	< 0.20		ug/l	0.20	0.20	1	SW8270DSIM	06-Dec-17	08-Dec-17 18:49	M-CT007	411966A	
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Surrogate recoveries:

17647-74-4	% 1,4-dioxane-d8	87			30-130 %			"	"	"	"	"	
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Attachment9.b: Draft Melone Property Subsurface Investigation - January 9 2018 (2630 : Geolnsight Report on environmental conditions)

Sample Identification

GP-7 (48') Client Project # 7877 Matrix Ground Water Collection Date/Time 01-Dec-17 13:55 Received 04-Dec-17
SC42065-10

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
Volatile Organic Compounds													
<u>Volatile Organic Compounds by SW846 8260</u>													
<u>Prepared by method SW846 5030 Water MS</u>													
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 1.00		µg/l	1.00	0.53	1	SW846 8260C	07-Dec-17	08-Dec-17	GMA	1720373	
67-64-1	Acetone	< 10.0		µg/l	10.0	0.80	1	"	"	"	"	"	
107-13-1	Acrylonitrile	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
71-43-2	Benzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
108-86-1	Bromobenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-97-5	Bromochloromethane	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		µg/l	0.50	0.42	1	"	"	"	"	"	
75-25-2	Bromoform	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
74-83-9	Bromomethane	< 2.00		µg/l	2.00	0.90	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	< 2.00		µg/l	2.00	1.07	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	< 1.00		µg/l	1.00	0.41	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
75-15-0	Carbon disulfide	< 2.00		µg/l	2.00	0.41	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 1.00		µg/l	1.00	0.44	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 1.00		µg/l	1.00	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 2.00		µg/l	2.00	0.59	1	"	"	"	"	"	
67-66-3	Chloroform	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-87-3	Chloromethane	< 2.00		µg/l	2.00	0.37	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	< 2.00		µg/l	2.00	0.86	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		µg/l	0.50	0.32	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	< 0.50		µg/l	0.50	0.20	1	"	"	"	"	"	
74-95-3	Dibromomethane	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 1.00		µg/l	1.00	0.27	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	< 2.00		µg/l	2.00	0.58	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 1.00		µg/l	1.00	0.69	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	< 1.00		µg/l	1.00	0.21	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	< 1.00		µg/l	1.00	0.58	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.36	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.35	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	< 2.00		µg/l	2.00	0.53	1	"	"	"	"	"	

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Sample Identification

GP-7 (48') **Client Project #** 7877 **Matrix** Ground Water **Collection Date/Time** 01-Dec-17 13:55 **Received** 04-Dec-17
 SC42065-10

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
Volatile Organic Compounds													
Volatile Organic Compounds by SW846 8260													
98-82-8	Isopropylbenzene	< 1.00		µg/l	1.00	0.36	1	SW846 8260C	07-Dec-17	08-Dec-17	GMA	1720373	
99-87-6	4-Isopropyltoluene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	< 1.00		µg/l	1.00	0.24	1	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 2.00		µg/l	2.00	0.52	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 2.00		µg/l	2.00	0.66	1	"	"	"	"	"	
91-20-3	Naphthalene	< 1.00		µg/l	1.00	0.35	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
100-42-5	Styrene	< 1.00		µg/l	1.00	0.40	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.50		µg/l	0.50	0.33	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 1.00		µg/l	1.00	0.57	1	"	"	"	"	"	
108-88-3	Toluene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
108-70-3	1,3,5-Trichlorobenzene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	< 1.00		µg/l	1.00	0.51	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 1.00		µg/l	1.00	0.50	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	< 1.00		µg/l	1.00	0.36	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	< 1.00		µg/l	1.00	0.43	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 1.00		µg/l	1.00	0.47	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 2.00		µg/l	2.00	0.38	1	"	"	"	"	"	
95-47-6	o-Xylene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	< 2.00		µg/l	2.00	1.06	1	"	"	"	"	"	
60-29-7	Ethyl ether	< 1.00		µg/l	1.00	0.37	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	< 10.0		µg/l	10.0	5.90	1	"	"	"	"	"	
123-91-1	1,4-Dioxane	< 20.0		µg/l	20.0	11.4	1	"	"	"	"	"	
110-57-6	trans-1,4-Dichloro-2-buten e	< 5.00		µg/l	5.00	0.82	1	"	"	"	"	"	
64-17-5	Ethanol	< 200		µg/l	200	30.9	1	"	"	"	"	"	

Surrogate recoveries:

460-00-4	4-Bromofluorobenzene	99			70-130 %		"	"	"	"	"	"	
2037-26-5	Toluene-d8	101			70-130 %		"	"	"	"	"	"	
17060-07-0	1,2-Dichloroethane-d4	107			70-130 %		"	"	"	"	"	"	
1868-53-7	Dibromofluoromethane	103			70-130 %		"	"	"	"	"	"	

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1720373 - SW846 5030 Water MS										
Blank (1720373-BLK1)					<u>Prepared & Analyzed: 07-Dec-17</u>					
1,1,2-Trichlorotrifluoroethane (Freon 113)	< 1.00		µg/l	1.00						
Acetone	< 10.0		µg/l	10.0						
Acrylonitrile	< 0.50		µg/l	0.50						
Benzene	< 1.00		µg/l	1.00						
Bromobenzene	< 1.00		µg/l	1.00						
Bromochloromethane	< 1.00		µg/l	1.00						
Bromodichloromethane	< 0.50		µg/l	0.50						
Bromoform	< 1.00		µg/l	1.00						
Bromomethane	< 2.00		µg/l	2.00						
2-Butanone (MEK)	< 2.00		µg/l	2.00						
n-Butylbenzene	< 1.00		µg/l	1.00						
sec-Butylbenzene	< 1.00		µg/l	1.00						
tert-Butylbenzene	< 1.00		µg/l	1.00						
Carbon disulfide	< 2.00		µg/l	2.00						
Carbon tetrachloride	< 1.00		µg/l	1.00						
Chlorobenzene	< 1.00		µg/l	1.00						
Chloroethane	< 2.00		µg/l	2.00						
Chloroform	< 1.00		µg/l	1.00						
Chloromethane	< 2.00		µg/l	2.00						
2-Chlorotoluene	< 1.00		µg/l	1.00						
4-Chlorotoluene	< 1.00		µg/l	1.00						
1,2-Dibromo-3-chloropropane	< 2.00		µg/l	2.00						
Dibromochloromethane	< 0.50		µg/l	0.50						
1,2-Dibromoethane (EDB)	< 0.50		µg/l	0.50						
Dibromomethane	< 1.00		µg/l	1.00						
1,2-Dichlorobenzene	< 1.00		µg/l	1.00						
1,3-Dichlorobenzene	< 1.00		µg/l	1.00						
1,4-Dichlorobenzene	< 1.00		µg/l	1.00						
Dichlorodifluoromethane (Freon12)	< 2.00		µg/l	2.00						
1,1-Dichloroethane	< 1.00		µg/l	1.00						
1,2-Dichloroethane	< 1.00		µg/l	1.00						
1,1-Dichloroethene	< 1.00		µg/l	1.00						
cis-1,2-Dichloroethene	< 1.00		µg/l	1.00						
trans-1,2-Dichloroethene	< 1.00		µg/l	1.00						
1,2-Dichloropropane	< 1.00		µg/l	1.00						
1,3-Dichloropropane	< 1.00		µg/l	1.00						
2,2-Dichloropropane	< 1.00		µg/l	1.00						
1,1-Dichloropropene	< 1.00		µg/l	1.00						
cis-1,3-Dichloropropene	< 0.50		µg/l	0.50						
trans-1,3-Dichloropropene	< 0.50		µg/l	0.50						
Ethylbenzene	< 1.00		µg/l	1.00						
Hexachlorobutadiene	< 0.50		µg/l	0.50						
2-Hexanone (MBK)	< 2.00		µg/l	2.00						
Isopropylbenzene	< 1.00		µg/l	1.00						
4-Isopropyltoluene	< 1.00		µg/l	1.00						
Methyl tert-butyl ether	< 1.00		µg/l	1.00						
4-Methyl-2-pentanone (MIBK)	< 2.00		µg/l	2.00						
Methylene chloride	< 2.00		µg/l	2.00						
Naphthalene	< 1.00		µg/l	1.00						
n-Propylbenzene	< 1.00		µg/l	1.00						

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1720373 - SW846 5030 Water MS										
Blank (1720373-BLK1)					<u>Prepared & Analyzed: 07-Dec-17</u>					
Styrene	< 1.00		µg/l	1.00						
1,1,1,2-Tetrachloroethane	< 1.00		µg/l	1.00						
1,1,2,2-Tetrachloroethane	< 0.50		µg/l	0.50						
Tetrachloroethene	< 1.00		µg/l	1.00						
Toluene	< 1.00		µg/l	1.00						
1,2,3-Trichlorobenzene	< 1.00		µg/l	1.00						
1,2,4-Trichlorobenzene	< 1.00		µg/l	1.00						
1,3,5-Trichlorobenzene	< 1.00		µg/l	1.00						
1,1,1-Trichloroethane	< 1.00		µg/l	1.00						
1,1,2-Trichloroethane	< 1.00		µg/l	1.00						
Trichloroethene	< 1.00		µg/l	1.00						
Trichlorofluoromethane (Freon 11)	< 1.00		µg/l	1.00						
1,2,3-Trichloropropane	< 1.00		µg/l	1.00						
1,2,4-Trimethylbenzene	< 1.00		µg/l	1.00						
1,3,5-Trimethylbenzene	< 1.00		µg/l	1.00						
Vinyl chloride	< 1.00		µg/l	1.00						
m,p-Xylene	< 2.00		µg/l	2.00						
o-Xylene	< 1.00		µg/l	1.00						
Tetrahydrofuran	< 2.00		µg/l	2.00						
Ethyl ether	< 1.00		µg/l	1.00						
Tert-amyl methyl ether	< 1.00		µg/l	1.00						
Ethyl tert-butyl ether	< 1.00		µg/l	1.00						
Di-isopropyl ether	< 1.00		µg/l	1.00						
Tert-Butanol / butyl alcohol	< 10.0		µg/l	10.0						
1,4-Dioxane	< 20.0		µg/l	20.0						
trans-1,4-Dichloro-2-butene	< 5.00		µg/l	5.00						
Ethanol	< 200		µg/l	200						
Surrogate: 4-Bromofluorobenzene	49.5		µg/l		50.0		99	70-130		
Surrogate: Toluene-d8	49.8		µg/l		50.0		100	70-130		
Surrogate: 1,2-Dichloroethane-d4	52.0		µg/l		50.0		104	70-130		
Surrogate: Dibromofluoromethane	51.0		µg/l		50.0		102	70-130		
LCS (1720373-BS1)					<u>Prepared & Analyzed: 07-Dec-17</u>					
1,1,2-Trichlorotrifluoroethane (Freon 113)	19.6		µg/l		20.0		98	70-130		
Acetone	19.6		µg/l		20.0		98	70-130		
Acrylonitrile	16.6		µg/l		20.0		83	70-130		
Benzene	21.3		µg/l		20.0		107	70-130		
Bromobenzene	21.2		µg/l		20.0		106	70-130		
Bromochloromethane	20.8		µg/l		20.0		104	70-130		
Bromodichloromethane	21.2		µg/l		20.0		106	70-130		
Bromoform	20.9		µg/l		20.0		105	70-130		
Bromomethane	12.4		µg/l		20.0		62	70-130		
2-Butanone (MEK)	20.6		µg/l		20.0		103	70-130		
n-Butylbenzene	20.0		µg/l		20.0		100	70-130		
sec-Butylbenzene	20.8		µg/l		20.0		104	70-130		
tert-Butylbenzene	20.7		µg/l		20.0		103	70-130		
Carbon disulfide	21.2		µg/l		20.0		106	70-130		
Carbon tetrachloride	20.8		µg/l		20.0		104	70-130		
Chlorobenzene	20.4		µg/l		20.0		102	70-130		
Chloroethane	17.0		µg/l		20.0		85	70-130		
Chloroform	20.4		µg/l		20.0		102	70-130		

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1720373 - SW846 5030 Water MS										
LCS (1720373-BS1)					Prepared & Analyzed: 07-Dec-17					
Chloromethane	15.4		µg/l		20.0		77	70-130		
2-Chlorotoluene	21.8		µg/l		20.0		109	70-130		
4-Chlorotoluene	22.2		µg/l		20.0		111	70-130		
1,2-Dibromo-3-chloropropane	24.1		µg/l		20.0		121	70-130		
Dibromochloromethane	22.3		µg/l		20.0		111	70-130		
1,2-Dibromoethane (EDB)	23.0		µg/l		20.0		115	70-130		
Dibromomethane	21.6		µg/l		20.0		108	70-130		
1,2-Dichlorobenzene	22.6		µg/l		20.0		113	70-130		
1,3-Dichlorobenzene	21.2		µg/l		20.0		106	70-130		
1,4-Dichlorobenzene	21.3		µg/l		20.0		106	70-130		
Dichlorodifluoromethane (Freon12)	18.7		µg/l		20.0		93	70-130		
1,1-Dichloroethane	20.7		µg/l		20.0		104	70-130		
1,2-Dichloroethane	21.8		µg/l		20.0		109	70-130		
1,1-Dichloroethene	17.6		µg/l		20.0		88	70-130		
cis-1,2-Dichloroethene	20.9		µg/l		20.0		104	70-130		
trans-1,2-Dichloroethene	19.8		µg/l		20.0		99	70-130		
1,2-Dichloropropane	21.4		µg/l		20.0		107	70-130		
1,3-Dichloropropane	22.3		µg/l		20.0		112	70-130		
2,2-Dichloropropane	19.7		µg/l		20.0		99	70-130		
1,1-Dichloropropene	21.2		µg/l		20.0		106	70-130		
cis-1,3-Dichloropropene	19.6		µg/l		20.0		98	70-130		
trans-1,3-Dichloropropene	19.9		µg/l		20.0		99	70-130		
Ethylbenzene	21.8		µg/l		20.0		109	70-130		
Hexachlorobutadiene	27.2	QM9	µg/l		20.0		136	70-130		
2-Hexanone (MBK)	22.8		µg/l		20.0		114	70-130		
Isopropylbenzene	21.2		µg/l		20.0		106	70-130		
4-Isopropyltoluene	24.8		µg/l		20.0		124	70-130		
Methyl tert-butyl ether	20.7		µg/l		20.0		104	70-130		
4-Methyl-2-pentanone (MIBK)	22.8		µg/l		20.0		114	70-130		
Methylene chloride	15.2		µg/l		20.0		76	70-130		
Naphthalene	22.3		µg/l		20.0		111	70-130		
n-Propylbenzene	20.8		µg/l		20.0		104	70-130		
Styrene	20.1		µg/l		20.0		101	70-130		
1,1,1,2-Tetrachloroethane	21.0		µg/l		20.0		105	70-130		
1,1,2,2-Tetrachloroethane	23.5		µg/l		20.0		118	70-130		
Tetrachloroethene	19.9		µg/l		20.0		99	70-130		
Toluene	21.3		µg/l		20.0		106	70-130		
1,2,3-Trichlorobenzene	26.4	QC2	µg/l		20.0		132	70-130		
1,2,4-Trichlorobenzene	20.3		µg/l		20.0		102	70-130		
1,3,5-Trichlorobenzene	21.5		µg/l		20.0		108	70-130		
1,1,1-Trichloroethane	21.1		µg/l		20.0		105	70-130		
1,1,2-Trichloroethane	22.3		µg/l		20.0		112	70-130		
Trichloroethene	20.9		µg/l		20.0		105	70-130		
Trichlorofluoromethane (Freon 11)	19.4		µg/l		20.0		97	70-130		
1,2,3-Trichloropropane	24.6		µg/l		20.0		123	70-130		
1,2,4-Trimethylbenzene	20.7		µg/l		20.0		103	70-130		
1,3,5-Trimethylbenzene	20.6		µg/l		20.0		103	70-130		
Vinyl chloride	16.4		µg/l		20.0		82	70-130		
m,p-Xylene	22.3		µg/l		20.0		112	70-130		
o-Xylene	22.3		µg/l		20.0		112	70-130		

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1720373 - SW846 5030 Water MS										
LCS (1720373-BS1)					<u>Prepared & Analyzed: 07-Dec-17</u>					
Tetrahydrofuran	23.0		µg/l		20.0		115	70-130		
Ethyl ether	18.4		µg/l		20.0		92	70-130		
Tert-amyl methyl ether	20.4		µg/l		20.0		102	70-130		
Ethyl tert-butyl ether	20.4		µg/l		20.0		102	70-130		
Di-isopropyl ether	21.1		µg/l		20.0		105	70-130		
Tert-Butanol / butyl alcohol	190		µg/l		200		95	70-130		
1,4-Dioxane	210		µg/l		200		105	70-130		
trans-1,4-Dichloro-2-butene	20.6		µg/l		20.0		103	70-130		
Ethanol	364		µg/l		400		91	70-130		
Surrogate: 4-Bromofluorobenzene	49.4		µg/l		50.0		99	70-130		
Surrogate: Toluene-d8	49.9		µg/l		50.0		100	70-130		
Surrogate: 1,2-Dichloroethane-d4	52.7		µg/l		50.0		105	70-130		
Surrogate: Dibromofluoromethane	50.1		µg/l		50.0		100	70-130		
LCS Dup (1720373-BSD1)					<u>Prepared & Analyzed: 07-Dec-17</u>					
1,1,2-Trichlorotrifluoroethane (Freon 113)	20.4		µg/l		20.0		102	70-130	4	20
Acetone	18.4		µg/l		20.0		92	70-130	6	20
Acrylonitrile	14.6		µg/l		20.0		73	70-130	13	20
Benzene	20.8		µg/l		20.0		104	70-130	2	20
Bromobenzene	25.7		µg/l		20.0		128	70-130	19	20
Bromochloromethane	20.0		µg/l		20.0		100	70-130	4	20
Bromodichloromethane	20.3		µg/l		20.0		101	70-130	5	20
Bromoform	22.2		µg/l		20.0		111	70-130	6	20
Bromomethane	12.9		µg/l		20.0		65	70-130	4	20
2-Butanone (MEK)	21.6		µg/l		20.0		108	70-130	5	20
n-Butylbenzene	20.9		µg/l		20.0		104	70-130	4	20
sec-Butylbenzene	25.1		µg/l		20.0		125	70-130	19	20
tert-Butylbenzene	21.2		µg/l		20.0		106	70-130	2	20
Carbon disulfide	20.8		µg/l		20.0		104	70-130	2	20
Carbon tetrachloride	20.2		µg/l		20.0		101	70-130	3	20
Chlorobenzene	20.6		µg/l		20.0		103	70-130	0.7	20
Chloroethane	15.7		µg/l		20.0		78	70-130	8	20
Chloroform	19.8		µg/l		20.0		99	70-130	3	20
Chloromethane	15.4		µg/l		20.0		77	70-130	0.4	20
2-Chlorotoluene	21.6		µg/l		20.0		108	70-130	0.9	20
4-Chlorotoluene	21.8		µg/l		20.0		109	70-130	2	20
1,2-Dibromo-3-chloropropane	25.7		µg/l		20.0		129	70-130	6	20
Dibromochloromethane	21.8		µg/l		20.0		109	70-130	2	20
1,2-Dibromoethane (EDB)	22.3		µg/l		20.0		112	70-130	3	20
Dibromomethane	21.4		µg/l		20.0		107	70-130	1	20
1,2-Dichlorobenzene	24.0		µg/l		20.0		120	70-130	6	20
1,3-Dichlorobenzene	25.1		µg/l		20.0		126	70-130	17	20
1,4-Dichlorobenzene	22.2		µg/l		20.0		111	70-130	4	20
Dichlorodifluoromethane (Freon12)	18.7		µg/l		20.0		94	70-130	0.2	20
1,1-Dichloroethane	20.0		µg/l		20.0		100	70-130	3	20
1,2-Dichloroethane	21.4		µg/l		20.0		107	70-130	1	20
1,1-Dichloroethene	16.8		µg/l		20.0		84	70-130	5	20
cis-1,2-Dichloroethene	21.1		µg/l		20.0		105	70-130	0.9	20
trans-1,2-Dichloroethene	19.7		µg/l		20.0		98	70-130	0.5	20
1,2-Dichloropropane	20.2		µg/l		20.0		101	70-130	5	20
1,3-Dichloropropane	22.0		µg/l		20.0		110	70-130	2	20

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1720373 - SW846 5030 Water MS										
LCS Dup (1720373-BSD1)					Prepared & Analyzed: 07-Dec-17					
2,2-Dichloropropane	18.2		µg/l		20.0		91	70-130	8	20
1,1-Dichloropropene	20.2		µg/l		20.0		101	70-130	4	20
cis-1,3-Dichloropropene	19.1		µg/l		20.0		95	70-130	2	20
trans-1,3-Dichloropropene	19.4		µg/l		20.0		97	70-130	2	20
Ethylbenzene	21.4		µg/l		20.0		107	70-130	2	20
Hexachlorobutadiene	25.1		µg/l		20.0		125	70-130	8	20
2-Hexanone (MBK)	23.9		µg/l		20.0		119	70-130	5	20
Isopropylbenzene	25.6		µg/l		20.0		128	70-130	19	20
4-Isopropyltoluene	25.8		µg/l		20.0		129	70-130	4	20
Methyl tert-butyl ether	20.5		µg/l		20.0		103	70-130	1	20
4-Methyl-2-pentanone (MIBK)	22.9		µg/l		20.0		114	70-130	0.2	20
Methylene chloride	17.7		µg/l		20.0		89	70-130	15	20
Naphthalene	27.8	QM9, QR5	µg/l		20.0		139	70-130	22	20
n-Propylbenzene	22.9		µg/l		20.0		114	70-130	9	20
Styrene	24.9	QR2	µg/l		20.0		125	70-130	21	20
1,1,1,2-Tetrachloroethane	21.0		µg/l		20.0		105	70-130	0	20
1,1,2,2-Tetrachloroethane	30.8	QM9, QR5	µg/l		20.0		154	70-130	27	20
Tetrachloroethene	19.8		µg/l		20.0		99	70-130	0.5	20
Toluene	20.6		µg/l		20.0		103	70-130	3	20
1,2,3-Trichlorobenzene	27.5	QC2	µg/l		20.0		138	70-130	4	20
1,2,4-Trichlorobenzene	20.6		µg/l		20.0		103	70-130	1	20
1,3,5-Trichlorobenzene	21.9		µg/l		20.0		109	70-130	2	20
1,1,1-Trichloroethane	19.7		µg/l		20.0		99	70-130	7	20
1,1,2-Trichloroethane	21.6		µg/l		20.0		108	70-130	3	20
Trichloroethene	20.2		µg/l		20.0		101	70-130	3	20
Trichlorofluoromethane (Freon 11)	17.8		µg/l		20.0		89	70-130	8	20
1,2,3-Trichloropropane	31.1	QM9, QR5	µg/l		20.0		155	70-130	23	20
1,2,4-Trimethylbenzene	20.4		µg/l		20.0		102	70-130	1	20
1,3,5-Trimethylbenzene	20.5		µg/l		20.0		103	70-130	0.6	20
Vinyl chloride	15.4		µg/l		20.0		77	70-130	6	20
m,p-Xylene	21.7		µg/l		20.0		108	70-130	3	20
o-Xylene	27.7	QM9, QR5	µg/l		20.0		138	70-130	21	20
Tetrahydrofuran	22.4		µg/l		20.0		112	70-130	3	20
Ethyl ether	17.8		µg/l		20.0		89	70-130	3	20
Tert-amyl methyl ether	19.4		µg/l		20.0		97	70-130	5	20
Ethyl tert-butyl ether	20.8		µg/l		20.0		104	70-130	2	20
Di-isopropyl ether	20.9		µg/l		20.0		104	70-130	1	20
Tert-Butanol / butyl alcohol	197		µg/l		200		98	70-130	4	20
1,4-Dioxane	197		µg/l		200		98	70-130	7	20
trans-1,4-Dichloro-2-butene	25.6	QR2	µg/l		20.0		128	70-130	22	20
Ethanol	378		µg/l		400		95	70-130	4	20
Surrogate: 4-Bromofluorobenzene	60.8		µg/l		50.0		122	70-130		
Surrogate: Toluene-d8	50.4		µg/l		50.0		101	70-130		
Surrogate: 1,2-Dichloroethane-d4	51.3		µg/l		50.0		103	70-130		
Surrogate: Dibromofluoromethane	49.3		µg/l		50.0		99	70-130		

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Subcontracted Analyses - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>SW8270DSIM</u>										
Batch 411966A - 411966-SW8										
<u>BLK (BZ51277-BLK)</u>					Prepared: 06-Dec-17 Analyzed: 08-Dec-17					
1,4-dioxane	ND		ug/l	0.25				-		
Surrogate: % 1,4-dioxane-d8	83		ug/l		5			30-130		
<u>LCS (BZ51277-LCS)</u>					Prepared: 06-Dec-17 Analyzed: 08-Dec-17					
1,4-dioxane	2.168		ug/l	0.25	2.5		87	30-130		20
Surrogate: % 1,4-dioxane-d8	4.376		ug/l		5		88	30-130		
<u>LCSD (BZ51277-LCSD)</u>					Prepared: 06-Dec-17 Analyzed: 08-Dec-17					
1,4-dioxane	2.278		%	%	2.5		91	30-130	4.5	20
Surrogate: % 1,4-dioxane-d8	4.568		%		5		91	30-130		
<u>MS (BZ51277-MS)</u>			<u>Source: SC42065-03</u>		Prepared: 06-Dec-17 Analyzed: 08-Dec-17					
1,4-dioxane	2.213		ug/l	0.25	2.5	BRL	89	30-130		20
Surrogate: % 1,4-dioxane-d8	4.546		ug/l		5		91	30-130		
<u>MSD (BZ51277-MSD)</u>			<u>Source: SC42065-03</u>		Prepared: 06-Dec-17 Analyzed: 08-Dec-17					
1,4-dioxane	2.251		%	%	2.5	BRL	90	30-130	1.1	20
Surrogate: % 1,4-dioxane-d8	4.787		%		5		96	30-130		

Notes and Definitions

QC2	Analyte out of acceptance range in QC spike but no reportable concentration present in sample.
QM9	The spike recovery for this QC sample is outside the established control limits. The sample results for the QC batch were accepted based on LCS/LCSD or SRM recoveries within the control limits.
QR2	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QR5	RPD out of acceptance range.
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:

☒ Standard TAT - 7 to 10 business days

☐ Rush TAT - Date Needed: _____

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 30 days unless otherwise instructed

Packet Pg. 144

Report To: <u>Geosignature, Inc.</u>				Invoice To: <u>See Report + 0</u>				Project No: <u>7877</u>											
<u>14 March Dr. Suite 201</u> <u>Litteton MA 01460</u>				<u>See Report + 0</u> <u>See Report + 0</u> <u>See Report + 0</u>				Site Name: <u>Melrose Property</u> Location: <u>North Rd, Sudbury</u> Sample(s): <u>LCG</u>											
Telephone #: <u>978-679-1100</u> Project Mgr: <u>Joe T. S. 110</u>				P.O. No.: _____ Quote #: _____															
F=Field Filtered 1=Na ₂ S ₂ O ₃ 2=HCl 3=H ₂ SO ₄ 4=HNO ₃ 5=NaOH 6=Ascorbic Acid 7=CH ₃ OH 8=NaHSO ₄ 9=Deionized Water 10=H ₃ PO ₄ 11= <u>1ce</u> 12=_____																			
DW=Drinking Water GW=Groundwater SW=Surface Water WW=Waste Water O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas																			
X1=_____ X2=_____ X3=_____																			
G=Grab				C=Composite															
Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Containers		Analysis		Check if chlorinated		QA/QC Reporting Notes: * additional charges may apply			
042065-1	GP-1 (56')	11/30/17	09:55	G	GW	3													
02	GP-1 (20')		10:45																
03	GP-2 (52')		11:45			2													
04	GP-2 (29')		12:45																
05	GP-5 (68')		15:55																
06	GP-5 (34')		16:40																
07	GP-6 (56')	12/11/17	09:12			2													
08	GP-6 (39')		10:20																
09	GP-7 (62')		12:25			2													
10	GP-7 (48')		13:55																
Relinquished by: _____				Received by: _____				Date: <u>12/17</u> Time: <u>11:08</u>				Temp °C: <u>2.5</u>				<input type="checkbox"/> EDD format: _____ <input checked="" type="checkbox"/> E-mail to: <u>jjtrifilio@geosign.com</u>			
Signature: <u>[Signature]</u>				Signature: <u>[Signature]</u>				Signature: <u>[Signature]</u>				Signature: <u>[Signature]</u>				Condition upon receipt: <input checked="" type="checkbox"/> Ambient <input type="checkbox"/> Iced <input type="checkbox"/> Refrigerated <input type="checkbox"/> DI VOA Frozen <input type="checkbox"/> Soil Jar Frozen			

Batch Summary

1720373

Volatile Organic Compounds

1720373-BLK1
1720373-BS1
1720373-BSD1
SC42065-01 (GP-1 (56'))
SC42065-02 (GP-1 (20'))
SC42065-03 (GP-2 (52'))
SC42065-04 (GP-2 (29'))
SC42065-05 (GP-5 (68'))
SC42065-06 (GP-5 (34'))
SC42065-07 (GP-6 (56'))
SC42065-08 (GP-6 (39'))
SC42065-09 (GP-7 (62'))
SC42065-10 (GP-7 (48'))

411966A

Subcontracted Analyses

BZ51277-BLK
BZ51277-LCS
BZ51277-LCSD
BZ51277-MS
BZ51277-MSD
SC42065-03 (GP-2 (52'))
SC42065-07 (GP-6 (56'))
SC42065-09 (GP-7 (62'))

S710225

Volatile Organic Compounds

S710225-CAL1
S710225-CAL2
S710225-CAL3
S710225-CAL4
S710225-CAL5
S710225-CAL6
S710225-CAL7
S710225-CAL8
S710225-CAL9
S710225-CALA
S710225-CALB
S710225-ICV1
S710225-LCV1
S710225-LCV2
S710225-TUN1

S710663

Volatile Organic Compounds

S710663-CCV1
S710663-TUN1

☒ Final Report
☐ Revised Report

Report Date:
15-Dec-17 14:10

Laboratory Report SC42066

GeoInsight, Inc.
1 Monarch Drive, Suite 201
Littleton, MA 01460
Attn: Joel Trifilo

Project: Melone Property - North Rd - Sudbury, MA
Project #: 7877

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87936
Maine # MA138
New Hampshire # 2972/2538
New Jersey # MA011
New York # 11393
Pennsylvania # 68-04426/68-02924
Rhode Island # LAO00348
USDA # P330-15-00375
Vermont # VT-11393



Authorized by:
Rebecca Merz
Quality Services Manager



Eurofins Spectrum Analytical holds primary certification in the State of Massachusetts for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of Massachusetts does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 29 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Eurofins Spectrum Analytical, Inc.

Eurofins Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Eurofins Spectrum Analytical, Inc. is currently accredited for the specific method or analyte indicated. Please refer to our Quality web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Eurofins Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey, Pennsylvania and Florida. All analytical work for Volatile Organic and Air analysis is transferred to and conducted at our 830 Silver Street location (PA-68-04426).

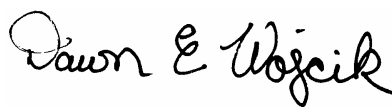
Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

Sample Summary

Work Order: SC42066
Project: Melone Property - North Rd - Sudbury, MA
Project Number: 7877

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Received</u>
SC42066-01	SS-1 (0-2)	Soil	30-Nov-17 10:10	04-Dec-17 14:20
SC42066-02	SS-2 (0-2)	Soil	30-Nov-17 10:40	04-Dec-17 14:20
SC42066-03	SS-3 (0-2)	Soil	30-Nov-17 11:05	04-Dec-17 14:20
SC42066-04	SS-4 (0-2)	Soil	30-Nov-17 11:35	04-Dec-17 14:20
SC42066-05	SS-5 (0-2)	Soil	30-Nov-17 12:05	04-Dec-17 14:20
SC42066-06	SS-6 (0-2)	Soil	30-Nov-17 13:30	04-Dec-17 14:20
SC42066-07	SS-7 (0-2)	Soil	30-Nov-17 13:55	04-Dec-17 14:20
SC42066-08	SS-8 (0-2)	Soil	30-Nov-17 14:25	04-Dec-17 14:20

MassDEP Analytical Protocol Certification Form

Laboratory Name: Eurofins Spectrum Analytical, Inc.			Project #: 7877		
Project Location: Melone Property - North Rd - Sudbury, MA			RTN:		
This form provides certifications for the following data set:			SC42066-01 through SC42066-08		
Matrices: Soil					
CAM Protocol					
8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	✓ 8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	✓ 8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
✓ 6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9012 Total Cyanide/PAC CAM VI A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B
<i>Affirmative responses to questions A through F are required for Presumptive Certainty's status</i>					
A	Were all samples received in a condition consistent with those described on the Chain of Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?				✓ Yes No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?				✓ Yes No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?				✓ Yes No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?				✓ Yes No
E	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?				Yes No Yes No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to questions A through E)?				✓ Yes No
<i>Responses to questions G, H and I below are required for Presumptive Certainty's status</i>					
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?				Yes ✓ No
Data User Note: Data that achieve Presumptive Certainty's status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40.1056 (2)(k) and WSC-07-350.					
H	Were all QC performance standards specified in the CAM protocol(s) achieved?				Yes ✓ No
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?				Yes ✓ No
<i>All negative responses are addressed in a case narrative on the cover page of this report.</i>					
<p><i>I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.</i></p> <div style="text-align: right; margin-top: 20px;">  Dawn E. Wojcik Laboratory Director Date: 12/15/2017 </div>					

CASE NARRATIVE:

Data has been reported to the RDL. This report excludes estimated concentrations detected below the RDL and above the MDL (J-Flag).

All non-detects and all results below the reporting limit are reported as "<" (less than) the reporting limit in this report.

The samples were received 2.5 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group. If method or program required MS/MSD/Dup were not performed, sufficient sample was not provided to the laboratory.

MADEP has published a list of analytical methods (CAM) which provides a series of recommended protocols for the acquisition, analysis and reporting of analytical data in support of MCP decisions. "Presumptive Certainty" can be established only for those methods published by the MADEP in the MCP CAM. The compounds and/or elements reported were specifically requested by the client on the Chain of Custody and in some cases may not include the full analyte list as defined in the method. Regulatory limits may not be achieved if specific method and/or technique was not requested on the Chain of Custody.

According to WSC-CAM 5/2009 Rev.1, Table 11 A-1, recovery for some VOC analytes have been deemed potentially difficult. Although they may still be within the recommended recovery range, a range has been set based on historical control limits.

Some target analytes which are not listed as exceptions in the Summary of CAM Reporting Limits may exceed the recommended RL based on sample initial volume or weight provided, % moisture content, or responsiveness of a particular analyte to purge and trap instrumentation.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

SW846 6010C**Spikes:**

1720443-MS1 *Source: SC42066-01*

The spike recovery exceeded the QC control limits for the MS and/or MSD. The batch was accepted based upon acceptable PS and /or LCS recovery.

Arsenic

1720443-MSD1 *Source: SC42066-01*

Visual evaluation of the sample indicates the RPD is above the control limit due to a non-homogeneous sample matrix.

Arsenic

Duplicates:

1720443-DUP1 *Source: SC42066-01*

Visual evaluation of the sample indicates the RPD is above the control limit due to a non-homogeneous sample matrix.

Arsenic

SW846 8081B**Samples:**

SC42066-05 *SS-5 (0-2)*

Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

4,4-DB-Octafluorobiphenyl (Sr)

Sample Acceptance Check Form

Client: GeoInsight, Inc. - Littleton, MA
 Project: Melone Property - North Rd - Sudbury, MA / 7877
 Work Order: SC42066
 Sample(s) received on: 12/4/2017

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Were custody seals present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Were custody seals intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Were samples received at a temperature of $\leq 6^{\circ}\text{C}$?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples refrigerated upon transfer to laboratory representative?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were sample containers received intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples accompanied by a Chain of Custody document?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did sample container labels agree with Chain of Custody document?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples received within method-specific holding times?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Summary of Hits

Lab ID: SC42066-01

Client ID: SS-1 (0-2)

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Arsenic	3.90		1.57	mg/kg	SW846 6010C

Lab ID: SC42066-02

Client ID: SS-2 (0-2)

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Arsenic	20.8		1.74	mg/kg	SW846 6010C

Lab ID: SC42066-03

Client ID: SS-3 (0-2)

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Arsenic	8.37		1.80	mg/kg	SW846 6010C

Lab ID: SC42066-04

Client ID: SS-4 (0-2)

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Arsenic	9.58		1.68	mg/kg	SW846 6010C

Lab ID: SC42066-05

Client ID: SS-5 (0-2)

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Arsenic	3.45		1.62	mg/kg	SW846 6010C

Lab ID: SC42066-06

Client ID: SS-6 (0-2)

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Arsenic	16.0		1.85	mg/kg	SW846 6010C

Lab ID: SC42066-07

Client ID: SS-7 (0-2)

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Arsenic	2.84		1.57	mg/kg	SW846 6010C

Lab ID: SC42066-08

Client ID: SS-8 (0-2)

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Arsenic	2.89		1.56	mg/kg	SW846 6010C

Please note that because there are no reporting limits associated with hazardous waste characterizations or micro analyses, this summary does not include hits from these analyses if included in this work order.

Sample Identification

SS-1 (0-2)	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42066-01	7877	Soil	30-Nov-17 10:10	04-Dec-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
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PesticidesOrganochlorine PesticidesPrepared by method SW846 3546

319-84-6	alpha-BHC	< 5.24		µg/kg dry	5.24	1.40	1	SW846 8081B	05-Dec-17	06-Dec-17	SM	1720199	
319-85-7	beta-BHC	< 5.24		µg/kg dry	5.24	2.07	1	"	"	"	"	"	
319-86-8	delta-BHC	< 5.24		µg/kg dry	5.24	1.51	1	"	"	"	"	"	
58-89-9	gamma-BHC (Lindane)	< 3.14		µg/kg dry	3.14	1.51	1	"	"	"	"	"	
76-44-8	Heptachlor	< 5.24		µg/kg dry	5.24	1.75	1	"	"	"	"	"	
309-00-2	Aldrin	< 5.24		µg/kg dry	5.24	1.61	1	"	"	"	"	"	
1024-57-3	Heptachlor epoxide	< 5.24		µg/kg dry	5.24	1.85	1	"	"	"	"	"	
959-98-8	Endosulfan I	< 5.24		µg/kg dry	5.24	1.84	1	"	"	"	"	"	
60-57-1	Dieldrin	< 5.24		µg/kg dry	5.24	1.84	1	"	"	"	"	"	
72-55-9	4,4'-DDE (p,p')	< 5.24		µg/kg dry	5.24	1.65	1	"	"	"	"	"	
72-20-8	Endrin	< 8.38		µg/kg dry	8.38	1.84	1	"	"	"	"	"	
33213-65-9	Endosulfan II	< 8.38		µg/kg dry	8.38	1.97	1	"	"	"	"	"	
72-54-8	4,4'-DDD (p,p')	< 8.38		µg/kg dry	8.38	1.82	1	"	"	"	"	"	
1031-07-8	Endosulfan sulfate	< 8.38		µg/kg dry	8.38	1.75	1	"	"	"	"	"	
50-29-3	4,4'-DDT (p,p')	< 8.38		µg/kg dry	8.38	1.61	1	"	"	"	"	"	
72-43-5	Methoxychlor	< 8.38		µg/kg dry	8.38	1.85	1	"	"	"	"	"	
53494-70-5	Endrin ketone	< 8.38		µg/kg dry	8.38	1.88	1	"	"	"	"	"	
7421-93-4	Endrin aldehyde	< 8.38		µg/kg dry	8.38	1.75	1	"	"	"	"	"	
5103-71-9	alpha-Chlordane	< 5.24		µg/kg dry	5.24	1.79	1	"	"	"	"	"	
5103-74-2	Chlordane (gamma)(trans)	< 5.24		µg/kg dry	5.24	1.88	1	"	"	"	"	"	
8001-35-2	Toxaphene	< 105		µg/kg dry	105	22.6	1	"	"	"	"	"	
57-74-9	Chlordane	< 20.9		µg/kg dry	20.9	20.7	1	"	"	"	"	"	
15972-60-8	Alachlor	< 5.24		µg/kg dry	5.24	2.57	1	"	"	"	"	"	

Surrogate recoveries:

10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	39			30-150 %			"	"	"	"	"	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	43			30-150 %			"	"	"	"	"	
2051-24-3	Decachlorobiphenyl (Sr)	44			30-150 %			"	"	"	"	"	
2051-24-3	Decachlorobiphenyl (Sr) [2C]	45			30-150 %			"	"	"	"	"	

Total Metals by EPA 6000/7000 Series MethodsPrepared by method SW846 3050B

7440-38-2	Arsenic	3.90		mg/kg dry	1.57	0.199	1	SW846 6010C	11-Dec-17	14-Dec-17	SJR/TBC	1720443	
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General Chemistry Parameters

% Solids	95.2		%				1	SM2540 G (11) Mod.	04-Dec-17	04-Dec-17	BD	1720176	
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Subcontracted AnalysesSubcontracted AnalysesPrepared by method 411796-Methylation date: 05-Dec-17*Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007*

93-76-5	2,4,5-T	< 87		ug/kg	87	87	10	SW8151A	05-Dec-17	06-Dec-17 16:17	M-CT007	411796A	
93-72-1	2,4,5-TP (Silvex)	< 87		ug/kg	87	87	10	"	"	"	"	"	
94-75-7	2,4-D	< 170		ug/kg	170	170	10	"	"	"	"	"	
94-82-6	2,4-DB	< 870		ug/kg	870	870	10	"	"	"	"	"	
75-99-0	Dalapon	< 87		ug/kg	87	87	10	"	"	"	"	"	

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Sample Identification

SS-1 (0-2)	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42066-01	7877	Soil	30-Nov-17 10:10	04-Dec-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
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Subcontracted AnalysesSubcontracted AnalysesMethylation date: 05-Dec-17*Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007*

1918-00-9	Dicamba	< 87		ug/kg	87	87	10	SW8151A	05-Dec-17	06-Dec-17 16:17	M-CT007	411796A	
120-36-5	Dichloroprop	< 130		ug/kg	130	130	10	"	"	"	"	"	
88-85-7	Dinoseb	< 87		ug/kg	87	87	10	"	"	"	"	"	
94-74-6	MCPA	< 26000		ug/kg	26000	26000	10	"	"	"	"	"	
7085-19-0	MCPD	< 26000		ug/kg	26000	26000	10	"	"	"	"	"	

Surrogate recoveries:

19719-28-9	% DCAA	55			30-150 %			"	"	"	"	"	
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*Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007*

Percent Solid	95	%				1	SW846-%Solid	30-Nov-17 10:10	05-Dec-17 20:00	M-CT007	'[none]'		
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Sample Identification

SS-2 (0-2)	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42066-02	7877	Soil	30-Nov-17 10:40	04-Dec-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
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Total Metals by EPA 6000/7000 Series MethodsPrepared by method SW846 3050B

7440-38-2	Arsenic	20.8		mg/kg dry	1.74	0.221	1	SW846 6010C	11-Dec-17	14-Dec-17	SJR/TBC	1720443	
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General Chemistry Parameters

% Solids	85.3			%			1	SM2540 G (11) Mod.	04-Dec-17	04-Dec-17	BD	1720176	
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Sample Identification

SS-3 (0-2)	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42066-03	7877	Soil	30-Nov-17 11:05	04-Dec-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
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PesticidesOrganochlorine PesticidesPrepared by method SW846 3546

319-84-6	alpha-BHC	< 6.02		µg/kg dry	6.02	1.61	1	SW846 8081B	05-Dec-17	06-Dec-17	SM	1720199	
319-85-7	beta-BHC	< 6.02		µg/kg dry	6.02	2.38	1	"	"	"	"	"	
319-86-8	delta-BHC	< 6.02		µg/kg dry	6.02	1.73	1	"	"	"	"	"	
58-89-9	gamma-BHC (Lindane)	< 3.61		µg/kg dry	3.61	1.73	1	"	"	"	"	"	
76-44-8	Heptachlor	< 6.02		µg/kg dry	6.02	2.01	1	"	"	"	"	"	
309-00-2	Aldrin	< 6.02		µg/kg dry	6.02	1.85	1	"	"	"	"	"	
1024-57-3	Heptachlor epoxide	< 6.02		µg/kg dry	6.02	2.13	1	"	"	"	"	"	
959-98-8	Endosulfan I	< 6.02		µg/kg dry	6.02	2.12	1	"	"	"	"	"	
60-57-1	Dieldrin	< 6.02		µg/kg dry	6.02	2.12	1	"	"	"	"	"	
72-55-9	4,4'-DDE (p,p')	< 6.02		µg/kg dry	6.02	1.90	1	"	"	"	"	"	
72-20-8	Endrin	< 9.63		µg/kg dry	9.63	2.12	1	"	"	"	"	"	
33213-65-9	Endosulfan II	< 9.63		µg/kg dry	9.63	2.26	1	"	"	"	"	"	
72-54-8	4,4'-DDD (p,p')	< 9.63		µg/kg dry	9.63	2.10	1	"	"	"	"	"	
1031-07-8	Endosulfan sulfate	< 9.63		µg/kg dry	9.63	2.01	1	"	"	"	"	"	
50-29-3	4,4'-DDT (p,p')	< 9.63		µg/kg dry	9.63	1.85	1	"	"	"	"	"	
72-43-5	Methoxychlor	< 9.63		µg/kg dry	9.63	2.13	1	"	"	"	"	"	
53494-70-5	Endrin ketone	< 9.63		µg/kg dry	9.63	2.17	1	"	"	"	"	"	
7421-93-4	Endrin aldehyde	< 9.63		µg/kg dry	9.63	2.01	1	"	"	"	"	"	
5103-71-9	alpha-Chlordane	< 6.02		µg/kg dry	6.02	2.06	1	"	"	"	"	"	
5103-74-2	Chlordane (gamma)(trans)	< 6.02		µg/kg dry	6.02	2.17	1	"	"	"	"	"	
8001-35-2	Toxaphene	< 120		µg/kg dry	120	26.0	1	"	"	"	"	"	
57-74-9	Chlordane	< 24.1		µg/kg dry	24.1	23.8	1	"	"	"	"	"	
15972-60-8	Alachlor	< 6.02		µg/kg dry	6.02	2.95	1	"	"	"	"	"	

Surrogate recoveries:

10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	62			30-150 %			"	"	"	"	"	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	72			30-150 %			"	"	"	"	"	
2051-24-3	Decachlorobiphenyl (Sr)	74			30-150 %			"	"	"	"	"	
2051-24-3	Decachlorobiphenyl (Sr) [2C]	57			30-150 %			"	"	"	"	"	

Total Metals by EPA 6000/7000 Series MethodsPrepared by method SW846 3050B

7440-38-2	Arsenic	8.37		mg/kg dry	1.80	0.228	1	SW846 6010C	11-Dec-17	14-Dec-17	SJR/TBC	1720443	
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General Chemistry Parameters

% Solids	82.5		%				1	SM2540 G (11) Mod.	04-Dec-17	04-Dec-17	BD	1720176	
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Subcontracted AnalysesSubcontracted AnalysesPrepared by method 411796-Methylation date: 05-Dec-17*Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007*

93-76-5	2,4,5-T	< 100		ug/kg	100	100	10	SW8151A	05-Dec-17	06-Dec-17 16:36	M-CT007	411796A	
93-72-1	2,4,5-TP (Silvex)	< 100		ug/kg	100	100	10	"	"	"	"	"	
94-75-7	2,4-D	< 200		ug/kg	200	200	10	"	"	"	"	"	
94-82-6	2,4-DB	< 1000		ug/kg	1000	1000	10	"	"	"	"	"	
75-99-0	Dalapon	< 100		ug/kg	100	100	10	"	"	"	"	"	

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Sample Identification

SS-3 (0-2)	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42066-03	7877	Soil	30-Nov-17 11:05	04-Dec-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
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Subcontracted AnalysesSubcontracted AnalysesMethylation date: 05-Dec-17*Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007*

1918-00-9	Dicamba	< 100		ug/kg	100	100	10	SW8151A	05-Dec-17	06-Dec-17 16:36	M-CT007	411796A	
120-36-5	Dichloroprop	< 150		ug/kg	150	150	10	"	"	"	"	"	
88-85-7	Dinoseb	< 100		ug/kg	100	100	10	"	"	"	"	"	
94-74-6	MCPA	< 30000		ug/kg	30000	30000	10	"	"	"	"	"	
7085-19-0	MCPP	< 30000		ug/kg	30000	30000	10	"	"	"	"	"	

Surrogate recoveries:

19719-28-9	% DCAA	46			30-150 %			"	"	"	"	"	
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*Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007*

Percent Solid	83	%					1	SW846-%Solid	30-Nov-17 11:05	05-Dec-17 20:00	M-CT007	'[none]'	
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Sample Identification

SS-4 (0-2)	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42066-04	7877	Soil	30-Nov-17 11:35	04-Dec-17

<i>CAS No.</i>	<i>Analyte(s)</i>	<i>Result</i>	<i>Flag</i>	<i>Units</i>	<i>*RDL</i>	<i>MDL</i>	<i>Dilution</i>	<i>Method Ref.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Analyst</i>	<i>Batch</i>	<i>C</i>
Total Metals by EPA 6000/7000 Series Methods													
<u>Prepared by method SW846 3050B</u>													
7440-38-2	Arsenic	9.58		mg/kg dry	1.68	0.212	1	SW846 6010C	11-Dec-17	14-Dec-17	SJR/TBC	1720443	
General Chemistry Parameters													
	% Solids	88.4		%			1	SM2540 G (11) Mod.	04-Dec-17	04-Dec-17	BD	1720186	

Sample Identification

SS-5 (0-2)	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42066-05	7877	Soil	30-Nov-17 12:05	04-Dec-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
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PesticidesOrganochlorine PesticidesPrepared by method SW846 3546

319-84-6	alpha-BHC	< 5.38		µg/kg dry	5.38	1.44	1	SW846 8081B	05-Dec-17	06-Dec-17	SM	1720199	
319-85-7	beta-BHC	< 5.38		µg/kg dry	5.38	2.13	1	"	"	"	"	"	
319-86-8	delta-BHC	< 5.38		µg/kg dry	5.38	1.55	1	"	"	"	"	"	
58-89-9	gamma-BHC (Lindane)	< 3.23		µg/kg dry	3.23	1.55	1	"	"	"	"	"	
76-44-8	Heptachlor	< 5.38		µg/kg dry	5.38	1.80	1	"	"	"	"	"	
309-00-2	Aldrin	< 5.38		µg/kg dry	5.38	1.66	1	"	"	"	"	"	
1024-57-3	Heptachlor epoxide	< 5.38		µg/kg dry	5.38	1.90	1	"	"	"	"	"	
959-98-8	Endosulfan I	< 5.38		µg/kg dry	5.38	1.89	1	"	"	"	"	"	
60-57-1	Dieldrin	< 5.38		µg/kg dry	5.38	1.89	1	"	"	"	"	"	
72-55-9	4,4'-DDE (p,p')	< 5.38		µg/kg dry	5.38	1.70	1	"	"	"	"	"	
72-20-8	Endrin	< 8.60		µg/kg dry	8.60	1.89	1	"	"	"	"	"	
33213-65-9	Endosulfan II	< 8.60		µg/kg dry	8.60	2.02	1	"	"	"	"	"	
72-54-8	4,4'-DDD (p,p')	< 8.60		µg/kg dry	8.60	1.87	1	"	"	"	"	"	
1031-07-8	Endosulfan sulfate	< 8.60		µg/kg dry	8.60	1.80	1	"	"	"	"	"	
50-29-3	4,4'-DDT (p,p')	< 8.60		µg/kg dry	8.60	1.66	1	"	"	"	"	"	
72-43-5	Methoxychlor	< 8.60		µg/kg dry	8.60	1.90	1	"	"	"	"	"	
53494-70-5	Endrin ketone	< 8.60		µg/kg dry	8.60	1.94	1	"	"	"	"	"	
7421-93-4	Endrin aldehyde	< 8.60		µg/kg dry	8.60	1.80	1	"	"	"	"	"	
5103-71-9	alpha-Chlordane	< 5.38		µg/kg dry	5.38	1.84	1	"	"	"	"	"	
5103-74-2	Chlordane (gamma)(trans)	< 5.38		µg/kg dry	5.38	1.94	1	"	"	"	"	"	
8001-35-2	Toxaphene	< 108		µg/kg dry	108	23.3	1	"	"	"	"	"	
57-74-9	Chlordane	< 21.5		µg/kg dry	21.5	21.3	1	"	"	"	"	"	
15972-60-8	Alachlor	< 5.38		µg/kg dry	5.38	2.64	1	"	"	"	"	"	

Surrogate recoveries:

10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	28	SGC		30-150 %		"	"	"	"	"	"	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	41			30-150 %		"	"	"	"	"	"	
2051-24-3	Decachlorobiphenyl (Sr)	49			30-150 %		"	"	"	"	"	"	
2051-24-3	Decachlorobiphenyl (Sr) [2C]	31			30-150 %		"	"	"	"	"	"	

Total Metals by EPA 6000/7000 Series MethodsPrepared by method SW846 3050B

7440-38-2	Arsenic	3.45		mg/kg dry	1.62	0.205	1	SW846 6010C	11-Dec-17	14-Dec-17	SJR/TBC	1720443	
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General Chemistry Parameters

% Solids	91.6		%				1	SM2540 G (11) Mod.	04-Dec-17	04-Dec-17	BD	1720186	
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Subcontracted AnalysesSubcontracted AnalysesPrepared by method 411796-Methylation date: 05-Dec-17*Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007*

93-76-5	2,4,5-T	< 91		ug/kg	91	91	10	SW8151A	05-Dec-17	06-Dec-17	M-CT007	411796A	
93-72-1	2,4,5-TP (Silvex)	< 91		ug/kg	91	91	10	"	"	"	"	"	
94-75-7	2,4-D	< 180		ug/kg	180	180	10	"	"	"	"	"	
94-82-6	2,4-DB	< 910		ug/kg	910	910	10	"	"	"	"	"	
75-99-0	Dalapon	< 91		ug/kg	91	91	10	"	"	"	"	"	

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Sample Identification

SS-5 (0-2)	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42066-05	7877	Soil	30-Nov-17 12:05	04-Dec-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
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Subcontracted AnalysesSubcontracted AnalysesMethylation date: 05-Dec-17*Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007*

1918-00-9	Dicamba	< 91		ug/kg	91	91	10	SW8151A	05-Dec-17	06-Dec-17 16:55	M-CT007	411796A	
120-36-5	Dichloroprop	< 140		ug/kg	140	140	10	"	"	"	"	"	
88-85-7	Dinoseb	< 91		ug/kg	91	91	10	"	"	"	"	"	
94-74-6	MCPA	< 27000		ug/kg	27000	27000	10	"	"	"	"	"	
7085-19-0	MCP	< 27000		ug/kg	27000	27000	10	"	"	"	"	"	

Surrogate recoveries:

19719-28-9	% DCAA	43			30-150 %			"	"	"	"	"	
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*Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007*

Percent Solid	91	%				1	SW846-%Solid	30-Nov-17 12:05	05-Dec-17 20:00	M-CT007	'[none]'		
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Sample Identification

SS-6 (0-2)	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42066-06	7877	Soil	30-Nov-17 13:30	04-Dec-17

<i>CAS No.</i>	<i>Analyte(s)</i>	<i>Result</i>	<i>Flag</i>	<i>Units</i>	<i>*RDL</i>	<i>MDL</i>	<i>Dilution</i>	<i>Method Ref.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Analyst</i>	<i>Batch</i>	<i>C</i>
Total Metals by EPA 6000/7000 Series Methods													
<u>Prepared by method SW846 3050B</u>													
7440-38-2	Arsenic	16.0		mg/kg dry	1.85	0.235	1	SW846 6010C	11-Dec-17	14-Dec-17	SJR/TBC	1720443	
General Chemistry Parameters													
	% Solids	80.4		%			1	SM2540 G (11) Mod.	04-Dec-17	04-Dec-17	BD	1720186	

Sample Identification

SS-7 (0-2)	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42066-07	7877	Soil	30-Nov-17 13:55	04-Dec-17

<u>CAS No.</u>	<u>Analyte(s)</u>	<u>Result</u>	<u>Flag</u>	<u>Units</u>	<u>*RDL</u>	<u>MDL</u>	<u>Dilution</u>	<u>Method Ref.</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Analyst</u>	<u>Batch</u>	<u>C</u>
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PesticidesOrganochlorine PesticidesPrepared by method SW846 3546

319-84-6	alpha-BHC	< 5.26		µg/kg dry	5.26	1.41	1	SW846 8081B	05-Dec-17	06-Dec-17	SM	1720199	
319-85-7	beta-BHC	< 5.26		µg/kg dry	5.26	2.08	1	"	"	"	"	"	
319-86-8	delta-BHC	< 5.26		µg/kg dry	5.26	1.51	1	"	"	"	"	"	
58-89-9	gamma-BHC (Lindane)	< 3.15		µg/kg dry	3.15	1.51	1	"	"	"	"	"	
76-44-8	Heptachlor	< 5.26		µg/kg dry	5.26	1.76	1	"	"	"	"	"	
309-00-2	Aldrin	< 5.26		µg/kg dry	5.26	1.62	1	"	"	"	"	"	
1024-57-3	Heptachlor epoxide	< 5.26		µg/kg dry	5.26	1.86	1	"	"	"	"	"	
959-98-8	Endosulfan I	< 5.26		µg/kg dry	5.26	1.85	1	"	"	"	"	"	
60-57-1	Dieldrin	< 5.26		µg/kg dry	5.26	1.85	1	"	"	"	"	"	
72-55-9	4,4'-DDE (p,p')	< 5.26		µg/kg dry	5.26	1.66	1	"	"	"	"	"	
72-20-8	Endrin	< 8.41		µg/kg dry	8.41	1.85	1	"	"	"	"	"	
33213-65-9	Endosulfan II	< 8.41		µg/kg dry	8.41	1.98	1	"	"	"	"	"	
72-54-8	4,4'-DDD (p,p')	< 8.41		µg/kg dry	8.41	1.83	1	"	"	"	"	"	
1031-07-8	Endosulfan sulfate	< 8.41		µg/kg dry	8.41	1.76	1	"	"	"	"	"	
50-29-3	4,4'-DDT (p,p')	< 8.41		µg/kg dry	8.41	1.62	1	"	"	"	"	"	
72-43-5	Methoxychlor	< 8.41		µg/kg dry	8.41	1.86	1	"	"	"	"	"	
53494-70-5	Endrin ketone	< 8.41		µg/kg dry	8.41	1.89	1	"	"	"	"	"	
7421-93-4	Endrin aldehyde	< 8.41		µg/kg dry	8.41	1.76	1	"	"	"	"	"	
5103-71-9	alpha-Chlordane	< 5.26		µg/kg dry	5.26	1.80	1	"	"	"	"	"	
5103-74-2	Chlordane (gamma)(trans)	< 5.26		µg/kg dry	5.26	1.89	1	"	"	"	"	"	
8001-35-2	Toxaphene	< 105		µg/kg dry	105	22.7	1	"	"	"	"	"	
57-74-9	Chlordane	< 21.0		µg/kg dry	21.0	20.8	1	"	"	"	"	"	
15972-60-8	Alachlor	< 5.26		µg/kg dry	5.26	2.58	1	"	"	"	"	"	

Surrogate recoveries:

10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	35			30-150 %			"	"	"	"	"	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	49			30-150 %			"	"	"	"	"	
2051-24-3	Decachlorobiphenyl (Sr)	56			30-150 %			"	"	"	"	"	
2051-24-3	Decachlorobiphenyl (Sr) [2C]	47			30-150 %			"	"	"	"	"	

Total Metals by EPA 6000/7000 Series MethodsPrepared by method SW846 3050B

7440-38-2	Arsenic	2.84		mg/kg dry	1.57	0.198	1	SW846 6010C	11-Dec-17	14-Dec-17	SJR/TBC	1720443	
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General Chemistry Parameters

% Solids	94.6		%				1	SM2540 G (11) Mod.	04-Dec-17	04-Dec-17	BD	1720186	
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Subcontracted AnalysesSubcontracted AnalysesPrepared by method 411796-Methylation date: 05-Dec-17*Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007*

93-76-5	2,4,5-T	< 88		ug/kg	88	88	10	SW8151A	05-Dec-17	06-Dec-17	M-CT007	411796A	
										17:13			
93-72-1	2,4,5-TP (Silvex)	< 88		ug/kg	88	88	10	"	"	"	"	"	
94-75-7	2,4-D	< 180		ug/kg	180	180	10	"	"	"	"	"	
94-82-6	2,4-DB	< 880		ug/kg	880	880	10	"	"	"	"	"	
75-99-0	Dalapon	< 88		ug/kg	88	88	10	"	"	"	"	"	

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Sample Identification

SS-7 (0-2)	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42066-07	7877	Soil	30-Nov-17 13:55	04-Dec-17

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	C
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Subcontracted AnalysesSubcontracted AnalysesMethylation date: 05-Dec-17*Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007*

1918-00-9	Dicamba	< 88		ug/kg	88	88	10	SW8151A	05-Dec-17	06-Dec-17 17:13	M-CT007	411796A	
120-36-5	Dichloroprop	< 130		ug/kg	130	130	10	"	"	"	"	"	
88-85-7	Dinoseb	< 88		ug/kg	88	88	10	"	"	"	"	"	
94-74-6	MCPA	< 26000		ug/kg	26000	26000	10	"	"	"	"	"	
7085-19-0	MCPD	< 26000		ug/kg	26000	26000	10	"	"	"	"	"	

Surrogate recoveries:

19719-28-9	% DCAA	41			30-150 %			"	"	"	"	"	
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*Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007*

Percent Solid	95	%				1	SW846-%Solid	30-Nov-17 13:55	05-Dec-17 20:00	M-CT007	'[none]'		
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Sample Identification

SS-8 (0-2)	<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>
SC42066-08	7877	Soil	30-Nov-17 14:25	04-Dec-17

<i>CAS No.</i>	<i>Analyte(s)</i>	<i>Result</i>	<i>Flag</i>	<i>Units</i>	<i>*RDL</i>	<i>MDL</i>	<i>Dilution</i>	<i>Method Ref.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Analyst</i>	<i>Batch</i>	<i>C</i>
Total Metals by EPA 6000/7000 Series Methods													
<u>Prepared by method SW846 3050B</u>													
7440-38-2	Arsenic	2.89		mg/kg dry	1.56	0.198	1	SW846 6010C	11-Dec-17	14-Dec-17	SJR/TBC	1720443	
General Chemistry Parameters													
	% Solids	96.1		%			1	SM2540 G (11) Mod.	04-Dec-17	04-Dec-17	BD	1720186	

Pesticides - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8081B										
Batch 1720199 - SW846 3546										
Blank (1720199-BLK1)	Prepared: 05-Dec-17 Analyzed: 06-Dec-17									
alpha-BHC	< 4.99		µg/kg wet	4.99						
alpha-BHC [2C]	< 4.99		µg/kg wet	4.99						
beta-BHC	< 4.99		µg/kg wet	4.99						
beta-BHC [2C]	< 4.99		µg/kg wet	4.99						
delta-BHC	< 4.99		µg/kg wet	4.99						
delta-BHC [2C]	< 4.99		µg/kg wet	4.99						
gamma-BHC (Lindane)	< 3.00		µg/kg wet	3.00						
gamma-BHC (Lindane) [2C]	< 3.00		µg/kg wet	3.00						
Heptachlor	< 4.99		µg/kg wet	4.99						
Heptachlor [2C]	< 4.99		µg/kg wet	4.99						
Aldrin	< 4.99		µg/kg wet	4.99						
Aldrin [2C]	< 4.99		µg/kg wet	4.99						
Heptachlor epoxide	< 4.99		µg/kg wet	4.99						
Heptachlor epoxide [2C]	< 4.99		µg/kg wet	4.99						
Endosulfan I	< 4.99		µg/kg wet	4.99						
Endosulfan I [2C]	< 4.99		µg/kg wet	4.99						
Dieldrin	< 4.99		µg/kg wet	4.99						
Dieldrin [2C]	< 4.99		µg/kg wet	4.99						
4,4'-DDE (p,p')	< 4.99		µg/kg wet	4.99						
4,4'-DDE (p,p') [2C]	< 4.99		µg/kg wet	4.99						
Endrin	< 7.99		µg/kg wet	7.99						
Endrin [2C]	< 7.99		µg/kg wet	7.99						
Endosulfan II	< 7.99		µg/kg wet	7.99						
Endosulfan II [2C]	< 7.99		µg/kg wet	7.99						
4,4'-DDD (p,p')	< 7.99		µg/kg wet	7.99						
4,4'-DDD (p,p') [2C]	< 7.99		µg/kg wet	7.99						
Endosulfan sulfate	< 7.99		µg/kg wet	7.99						
Endosulfan sulfate [2C]	< 7.99		µg/kg wet	7.99						
4,4'-DDT (p,p')	< 7.99		µg/kg wet	7.99						
4,4'-DDT (p,p') [2C]	< 7.99		µg/kg wet	7.99						
Methoxychlor	< 7.99		µg/kg wet	7.99						
Methoxychlor [2C]	< 7.99		µg/kg wet	7.99						
Endrin ketone	< 7.99		µg/kg wet	7.99						
Endrin ketone [2C]	< 7.99		µg/kg wet	7.99						
Endrin aldehyde	< 7.99		µg/kg wet	7.99						
Endrin aldehyde [2C]	< 7.99		µg/kg wet	7.99						
alpha-Chlordane	< 4.99		µg/kg wet	4.99						
alpha-Chlordane [2C]	< 4.99		µg/kg wet	4.99						
Chlordane (gamma)(trans)	< 4.99		µg/kg wet	4.99						
Chlordane (gamma)(trans) [2C]	< 4.99		µg/kg wet	4.99						
Toxaphene	< 99.8		µg/kg wet	99.8						
Toxaphene [2C]	< 99.8		µg/kg wet	99.8						
Chlordane	< 20.0		µg/kg wet	20.0						
Chlordane [2C]	< 20.0		µg/kg wet	20.0						
Alachlor	< 4.99		µg/kg wet	4.99						
Alachlor [2C]	< 4.99		µg/kg wet	4.99						
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	8.92		µg/kg wet		9.98		89	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	8.98		µg/kg wet		9.98		90	30-150		
Surrogate: Decachlorobiphenyl (Sr)	7.95		µg/kg wet		9.98		80	30-150		

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Pesticides - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>SW846 8081B</u>										
Batch 1720199 - SW846 3546										
<u>Blank (1720199-BLK1)</u>					Prepared: 05-Dec-17 Analyzed: 06-Dec-17					
Surrogate: Decachlorobiphenyl (Sr) [2C]	6.70		µg/kg wet		9.98		67	30-150		
<u>LCS (1720199-BS1)</u>					Prepared: 05-Dec-17 Analyzed: 06-Dec-17					
alpha-BHC	15.4		µg/kg wet	4.98	24.9		62	40-140		
alpha-BHC [2C]	15.2		µg/kg wet	4.98	24.9		61	40-140		
beta-BHC	18.3		µg/kg wet	4.98	24.9		73	40-140		
beta-BHC [2C]	17.3		µg/kg wet	4.98	24.9		69	40-140		
delta-BHC	16.1		µg/kg wet	4.98	24.9		65	40-140		
delta-BHC [2C]	15.7		µg/kg wet	4.98	24.9		63	40-140		
gamma-BHC (Lindane)	16.1		µg/kg wet	2.99	24.9		65	40-140		
gamma-BHC (Lindane) [2C]	15.5		µg/kg wet	2.99	24.9		62	40-140		
Heptachlor	18.8		µg/kg wet	4.98	24.9		76	40-140		
Heptachlor [2C]	17.3		µg/kg wet	4.98	24.9		70	40-140		
Aldrin	17.8		µg/kg wet	4.98	24.9		71	40-140		
Aldrin [2C]	17.3		µg/kg wet	4.98	24.9		70	40-140		
Heptachlor epoxide	18.1		µg/kg wet	4.98	24.9		73	40-140		
Heptachlor epoxide [2C]	16.6		µg/kg wet	4.98	24.9		67	40-140		
Endosulfan I	19.5		µg/kg wet	4.98	24.9		79	40-140		
Endosulfan I [2C]	17.8		µg/kg wet	4.98	24.9		71	40-140		
Dieldrin	20.4		µg/kg wet	4.98	24.9		82	40-140		
Dieldrin [2C]	17.4		µg/kg wet	4.98	24.9		70	40-140		
4,4'-DDE (p,p')	20.0		µg/kg wet	4.98	24.9		80	40-140		
4,4'-DDE (p,p') [2C]	16.8		µg/kg wet	4.98	24.9		67	40-140		
Endrin	22.9		µg/kg wet	7.96	24.9		92	40-140		
Endrin [2C]	19.2		µg/kg wet	7.96	24.9		77	40-140		
Endosulfan II	23.2		µg/kg wet	7.96	24.9		93	40-140		
Endosulfan II [2C]	18.1		µg/kg wet	7.96	24.9		73	40-140		
4,4'-DDD (p,p')	22.3		µg/kg wet	7.96	24.9		90	40-140		
4,4'-DDD (p,p') [2C]	17.4		µg/kg wet	7.96	24.9		70	40-140		
Endosulfan sulfate	21.1		µg/kg wet	7.96	24.9		85	40-140		
Endosulfan sulfate [2C]	18.5		µg/kg wet	7.96	24.9		74	40-140		
4,4'-DDT (p,p')	24.4		µg/kg wet	7.96	24.9		98	40-140		
4,4'-DDT (p,p') [2C]	17.1		µg/kg wet	7.96	24.9		69	40-140		
Methoxychlor	21.3		µg/kg wet	7.96	24.9		86	40-140		
Methoxychlor [2C]	18.6		µg/kg wet	7.96	24.9		75	40-140		
Endrin ketone	17.8		µg/kg wet	7.96	24.9		71	40-140		
Endrin ketone [2C]	16.4		µg/kg wet	7.96	24.9		66	40-140		
Endrin aldehyde	24.1		µg/kg wet	7.96	24.9		97	40-140		
Endrin aldehyde [2C]	18.1		µg/kg wet	7.96	24.9		73	40-140		
alpha-Chlordane	18.2		µg/kg wet	4.98	24.9		73	40-140		
alpha-Chlordane [2C]	17.3		µg/kg wet	4.98	24.9		69	40-140		
Chlordane (gamma)(trans)	18.1		µg/kg wet	4.98	24.9		73	40-140		
Chlordane (gamma)(trans) [2C]	17.2		µg/kg wet	4.98	24.9		69	40-140		
Alachlor	18.6		µg/kg wet	4.98	24.9		75	40-140		
Alachlor [2C]	18.6		µg/kg wet	4.98	24.9		75	40-140		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	9.15		µg/kg wet		9.95		92	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	9.18		µg/kg wet		9.95		92	30-150		
Surrogate: Decachlorobiphenyl (Sr)	8.27		µg/kg wet		9.95		83	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]	6.54		µg/kg wet		9.95		66	30-150		
<u>LCS Dup (1720199-BS1)</u>					Prepared: 05-Dec-17 Analyzed: 06-Dec-17					

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Pesticides - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8081B										
Batch 1720199 - SW846 3546										
LCS Dup (1720199-BSD1)					Prepared: 05-Dec-17 Analyzed: 06-Dec-17					
alpha-BHC	15.6		µg/kg wet	4.98	24.9		63	40-140	2	30
alpha-BHC [2C]	15.3		µg/kg wet	4.98	24.9		61	40-140	0.6	30
beta-BHC	18.1		µg/kg wet	4.98	24.9		73	40-140	1	30
beta-BHC [2C]	17.5		µg/kg wet	4.98	24.9		70	40-140	1	30
delta-BHC	16.4		µg/kg wet	4.98	24.9		66	40-140	2	30
delta-BHC [2C]	15.9		µg/kg wet	4.98	24.9		64	40-140	1	30
gamma-BHC (Lindane)	16.3		µg/kg wet	2.99	24.9		66	40-140	1	30
gamma-BHC (Lindane) [2C]	15.8		µg/kg wet	2.99	24.9		63	40-140	2	30
Heptachlor	18.8		µg/kg wet	4.98	24.9		75	40-140	0.2	30
Heptachlor [2C]	17.6		µg/kg wet	4.98	24.9		71	40-140	2	30
Aldrin	18.3		µg/kg wet	4.98	24.9		73	40-140	3	30
Aldrin [2C]	17.9		µg/kg wet	4.98	24.9		72	40-140	3	30
Heptachlor epoxide	17.9		µg/kg wet	4.98	24.9		72	40-140	1	30
Heptachlor epoxide [2C]	16.8		µg/kg wet	4.98	24.9		68	40-140	1	30
Endosulfan I	18.8		µg/kg wet	4.98	24.9		76	40-140	4	30
Endosulfan I [2C]	18.0		µg/kg wet	4.98	24.9		72	40-140	1	30
Dieldrin	18.5		µg/kg wet	4.98	24.9		74	40-140	10	30
Dieldrin [2C]	17.5		µg/kg wet	4.98	24.9		70	40-140	0.6	30
4,4'-DDE (p,p')	18.1		µg/kg wet	4.98	24.9		73	40-140	10	30
4,4'-DDE (p,p') [2C]	17.1		µg/kg wet	4.98	24.9		68	40-140	2	30
Endrin	21.2		µg/kg wet	7.97	24.9		85	40-140	8	30
Endrin [2C]	19.2		µg/kg wet	7.97	24.9		77	40-140	0.3	30
Endosulfan II	19.2		µg/kg wet	7.97	24.9		77	40-140	19	30
Endosulfan II [2C]	17.9		µg/kg wet	7.97	24.9		72	40-140	1	30
4,4'-DDD (p,p')	18.8		µg/kg wet	7.97	24.9		75	40-140	17	30
4,4'-DDD (p,p') [2C]	17.4		µg/kg wet	7.97	24.9		70	40-140	0.2	30
Endosulfan sulfate	18.7		µg/kg wet	7.97	24.9		75	40-140	12	30
Endosulfan sulfate [2C]	18.4		µg/kg wet	7.97	24.9		74	40-140	0.5	30
4,4'-DDT (p,p')	19.3		µg/kg wet	7.97	24.9		78	40-140	23	30
4,4'-DDT (p,p') [2C]	17.1		µg/kg wet	7.97	24.9		69	40-140	0.3	30
Methoxychlor	20.4		µg/kg wet	7.97	24.9		82	40-140	4	30
Methoxychlor [2C]	18.1		µg/kg wet	7.97	24.9		73	40-140	3	30
Endrin ketone	16.9		µg/kg wet	7.97	24.9		68	40-140	5	30
Endrin ketone [2C]	16.4		µg/kg wet	7.97	24.9		66	40-140	0.2	30
Endrin aldehyde	20.2		µg/kg wet	7.97	24.9		81	40-140	18	30
Endrin aldehyde [2C]	20.8		µg/kg wet	7.97	24.9		83	40-140	14	30
alpha-Chlordane	18.0		µg/kg wet	4.98	24.9		72	40-140	1	30
alpha-Chlordane [2C]	17.6		µg/kg wet	4.98	24.9		70	40-140	2	30
Chlordane (gamma)(trans)	18.0		µg/kg wet	4.98	24.9		72	40-140	0.8	30
Chlordane (gamma)(trans) [2C]	17.5		µg/kg wet	4.98	24.9		70	40-140	2	30
Alachlor	18.5		µg/kg wet	4.98	24.9		74	40-140	0.3	30
Alachlor [2C]	19.9		µg/kg wet	4.98	24.9		80	40-140	7	30
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	8.68		µg/kg wet		9.96		87	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	8.61		µg/kg wet		9.96		86	30-150		
Surrogate: Decachlorobiphenyl (Sr)	7.21		µg/kg wet		9.96		72	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]	6.31		µg/kg wet		9.96		63	30-150		
Duplicate (1720199-DUP1)					Source: SC42066-07 Prepared: 05-Dec-17 Analyzed: 06-Dec-17					
alpha-BHC	< 5.25		µg/kg dry	5.25		BRL				30
alpha-BHC [2C]	< 5.25		µg/kg dry	5.25		BRL				30

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Pesticides - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8081B										
Batch 1720199 - SW846 3546										
<u>Duplicate (1720199-DUP1)</u>	<u>Source: SC42066-07</u>				<u>Prepared: 05-Dec-17 Analyzed: 06-Dec-17</u>					
beta-BHC	< 5.25		µg/kg dry	5.25		BRL				30
beta-BHC [2C]	< 5.25		µg/kg dry	5.25		BRL				30
delta-BHC	< 5.25		µg/kg dry	5.25		BRL				30
delta-BHC [2C]	< 5.25		µg/kg dry	5.25		BRL				30
gamma-BHC (Lindane)	< 3.15		µg/kg dry	3.15		BRL				30
gamma-BHC (Lindane) [2C]	< 3.15		µg/kg dry	3.15		BRL				30
Heptachlor	< 5.25		µg/kg dry	5.25		BRL				30
Heptachlor [2C]	< 5.25		µg/kg dry	5.25		BRL				30
Aldrin	< 5.25		µg/kg dry	5.25		BRL				30
Aldrin [2C]	< 5.25		µg/kg dry	5.25		BRL				30
Heptachlor epoxide	< 5.25		µg/kg dry	5.25		BRL				30
Heptachlor epoxide [2C]	< 5.25		µg/kg dry	5.25		BRL				30
Endosulfan I	< 5.25		µg/kg dry	5.25		BRL				30
Endosulfan I [2C]	< 5.25		µg/kg dry	5.25		BRL				30
Dieldrin	< 5.25		µg/kg dry	5.25		BRL				30
Dieldrin [2C]	< 5.25		µg/kg dry	5.25		BRL				30
4,4'-DDE (p,p')	< 5.25		µg/kg dry	5.25		BRL				30
4,4'-DDE (p,p') [2C]	< 5.25		µg/kg dry	5.25		BRL				30
Endrin	< 8.40		µg/kg dry	8.40		BRL				30
Endrin [2C]	< 8.40		µg/kg dry	8.40		BRL				30
Endosulfan II	< 8.40		µg/kg dry	8.40		BRL				30
Endosulfan II [2C]	< 8.40		µg/kg dry	8.40		BRL				30
4,4'-DDD (p,p')	< 8.40		µg/kg dry	8.40		BRL				30
4,4'-DDD (p,p') [2C]	< 8.40		µg/kg dry	8.40		BRL				30
Endosulfan sulfate	< 8.40		µg/kg dry	8.40		BRL				30
Endosulfan sulfate [2C]	< 8.40		µg/kg dry	8.40		BRL				30
4,4'-DDT (p,p')	< 8.40		µg/kg dry	8.40		BRL				30
4,4'-DDT (p,p') [2C]	< 8.40		µg/kg dry	8.40		BRL				30
Methoxychlor	< 8.40		µg/kg dry	8.40		BRL				30
Methoxychlor [2C]	< 8.40		µg/kg dry	8.40		BRL				30
Endrin ketone	< 8.40		µg/kg dry	8.40		BRL				30
Endrin ketone [2C]	< 8.40		µg/kg dry	8.40		BRL				30
Endrin aldehyde	< 8.40		µg/kg dry	8.40		BRL				30
Endrin aldehyde [2C]	< 8.40		µg/kg dry	8.40		BRL				30
alpha-Chlordane	< 5.25		µg/kg dry	5.25		BRL				30
alpha-Chlordane [2C]	< 5.25		µg/kg dry	5.25		BRL				30
Chlordane (gamma)(trans)	< 5.25		µg/kg dry	5.25		BRL				30
Chlordane (gamma)(trans) [2C]	< 5.25		µg/kg dry	5.25		BRL				30
Toxaphene	< 105		µg/kg dry	105		BRL				30
Toxaphene [2C]	< 105		µg/kg dry	105		BRL				30
Chlordane	< 21.0		µg/kg dry	21.0		BRL				30
Chlordane [2C]	< 21.0		µg/kg dry	21.0		BRL				30
Alachlor	< 5.25		µg/kg dry	5.25		BRL				30
Alachlor [2C]	< 5.25		µg/kg dry	5.25		BRL				30
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	4.06		µg/kg dry		10.5		39	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	5.95		µg/kg dry		10.5		57	30-150		
Surrogate: Decachlorobiphenyl (Sr)	5.63		µg/kg dry		10.5		54	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]	5.06		µg/kg dry		10.5		48	30-150		
<u>Matrix Spike (1720199-MS1)</u>	<u>Source: SC42066-07</u>				<u>Prepared: 05-Dec-17 Analyzed: 06-Dec-17</u>					

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Pesticides - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8081B										
Batch 1720199 - SW846 3546										
Matrix Spike (1720199-MS1)				Source: SC42066-07			Prepared: 05-Dec-17	Analyzed: 06-Dec-17		
alpha-BHC	14.3		µg/kg dry	5.23	26.1	BRL	55	30-150		
alpha-BHC [2C]	14.6		µg/kg dry	5.23	26.1	BRL	56	30-150		
beta-BHC	18.4		µg/kg dry	5.23	26.1	BRL	70	30-150		
beta-BHC [2C]	19.0		µg/kg dry	5.23	26.1	BRL	73	30-150		
delta-BHC	18.0		µg/kg dry	5.23	26.1	BRL	69	30-150		
delta-BHC [2C]	18.3		µg/kg dry	5.23	26.1	BRL	70	30-150		
gamma-BHC (Lindane)	15.4		µg/kg dry	3.14	26.1	BRL	59	30-150		
gamma-BHC (Lindane) [2C]	15.3		µg/kg dry	3.14	26.1	BRL	59	30-150		
Heptachlor	17.4		µg/kg dry	5.23	26.1	BRL	67	30-150		
Heptachlor [2C]	16.9		µg/kg dry	5.23	26.1	BRL	65	30-150		
Aldrin	16.4		µg/kg dry	5.23	26.1	BRL	63	30-150		
Aldrin [2C]	16.7		µg/kg dry	5.23	26.1	BRL	64	30-150		
Heptachlor epoxide	18.0		µg/kg dry	5.23	26.1	BRL	69	30-150		
Heptachlor epoxide [2C]	17.2		µg/kg dry	5.23	26.1	BRL	66	30-150		
Endosulfan I	19.0		µg/kg dry	5.23	26.1	BRL	73	30-150		
Endosulfan I [2C]	18.8		µg/kg dry	5.23	26.1	BRL	72	30-150		
Dieldrin	19.2		µg/kg dry	5.23	26.1	BRL	73	30-150		
Dieldrin [2C]	19.1		µg/kg dry	5.23	26.1	BRL	73	30-150		
4,4'-DDE (p,p')	18.8		µg/kg dry	5.23	26.1	BRL	72	30-150		
4,4'-DDE (p,p') [2C]	18.7		µg/kg dry	5.23	26.1	BRL	71	30-150		
Endrin	21.7		µg/kg dry	8.36	26.1	BRL	83	30-150		
Endrin [2C]	20.9		µg/kg dry	8.36	26.1	BRL	80	30-150		
Endosulfan II	20.6		µg/kg dry	8.36	26.1	BRL	79	30-150		
Endosulfan II [2C]	20.5		µg/kg dry	8.36	26.1	BRL	79	30-150		
4,4'-DDD (p,p')	20.0		µg/kg dry	8.36	26.1	BRL	77	30-150		
4,4'-DDD (p,p') [2C]	19.9		µg/kg dry	8.36	26.1	BRL	76	30-150		
Endosulfan sulfate	21.2		µg/kg dry	8.36	26.1	BRL	81	30-150		
Endosulfan sulfate [2C]	21.5		µg/kg dry	8.36	26.1	BRL	82	30-150		
4,4'-DDT (p,p')	21.8		µg/kg dry	8.36	26.1	BRL	84	30-150		
4,4'-DDT (p,p') [2C]	20.2		µg/kg dry	8.36	26.1	BRL	77	30-150		
Methoxychlor	23.3		µg/kg dry	8.36	26.1	BRL	89	30-150		
Methoxychlor [2C]	21.1		µg/kg dry	8.36	26.1	BRL	81	30-150		
Endrin ketone	18.8		µg/kg dry	8.36	26.1	BRL	72	30-150		
Endrin ketone [2C]	18.9		µg/kg dry	8.36	26.1	BRL	72	30-150		
Endrin aldehyde	22.5		µg/kg dry	8.36	26.1	BRL	86	30-150		
Endrin aldehyde [2C]	24.6		µg/kg dry	8.36	26.1	BRL	94	30-150		
alpha-Chlordane	18.3		µg/kg dry	5.23	26.1	BRL	70	30-150		
alpha-Chlordane [2C]	18.6		µg/kg dry	5.23	26.1	BRL	71	30-150		
Chlordane (gamma)(trans)	18.5		µg/kg dry	5.23	26.1	BRL	71	30-150		
Chlordane (gamma)(trans) [2C]	18.5		µg/kg dry	5.23	26.1	BRL	71	30-150		
Alachlor	19.8		µg/kg dry	5.23	26.1	BRL	76	30-150		
Alachlor [2C]	22.0		µg/kg dry	5.23	26.1	BRL	84	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	5.26		µg/kg dry		10.5		50	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	5.70		µg/kg dry		10.5		55	30-150		
Surrogate: Decachlorobiphenyl (Sr)	7.44		µg/kg dry		10.5		71	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]	4.74		µg/kg dry		10.5		45	30-150		
Matrix Spike Dup (1720199-MSD1)				Source: SC42066-07			Prepared: 05-Dec-17	Analyzed: 06-Dec-17		
alpha-BHC	13.7		µg/kg dry	5.26	26.3	BRL	52	30-150	4	30
alpha-BHC [2C]	13.6		µg/kg dry	5.26	26.3	BRL	52	30-150	7	30

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Pesticides - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8081B										
Batch 1720199 - SW846 3546										
Matrix Spike Dup (1720199-MSD1)				Source: SC42066-07			Prepared: 05-Dec-17	Analyzed: 06-Dec-17		
beta-BHC	18.0		µg/kg dry	5.26	26.3	BRL	68	30-150	2	30
beta-BHC [2C]	17.9		µg/kg dry	5.26	26.3	BRL	68	30-150	6	30
delta-BHC	17.6		µg/kg dry	5.26	26.3	BRL	67	30-150	2	30
delta-BHC [2C]	16.9		µg/kg dry	5.26	26.3	BRL	64	30-150	8	30
gamma-BHC (Lindane)	14.8		µg/kg dry	3.16	26.3	BRL	56	30-150	4	30
gamma-BHC (Lindane) [2C]	14.2		µg/kg dry	3.16	26.3	BRL	54	30-150	7	30
Heptachlor	16.7		µg/kg dry	5.26	26.3	BRL	64	30-150	4	30
Heptachlor [2C]	15.5		µg/kg dry	5.26	26.3	BRL	59	30-150	9	30
Aldrin	16.0		µg/kg dry	5.26	26.3	BRL	61	30-150	2	30
Aldrin [2C]	15.1		µg/kg dry	5.26	26.3	BRL	57	30-150	10	30
Heptachlor epoxide	17.5		µg/kg dry	5.26	26.3	BRL	67	30-150	3	30
Heptachlor epoxide [2C]	15.9		µg/kg dry	5.26	26.3	BRL	60	30-150	8	30
Endosulfan I	18.7		µg/kg dry	5.26	26.3	BRL	71	30-150	2	30
Endosulfan I [2C]	17.2		µg/kg dry	5.26	26.3	BRL	65	30-150	9	30
Dieldrin	19.1		µg/kg dry	5.26	26.3	BRL	73	30-150	0.4	30
Dieldrin [2C]	17.4		µg/kg dry	5.26	26.3	BRL	66	30-150	9	30
4,4'-DDE (p,p')	18.7		µg/kg dry	5.26	26.3	BRL	71	30-150	0.5	30
4,4'-DDE (p,p') [2C]	17.1		µg/kg dry	5.26	26.3	BRL	65	30-150	9	30
Endrin	21.8		µg/kg dry	8.42	26.3	BRL	83	30-150	0.05	30
Endrin [2C]	19.1		µg/kg dry	8.42	26.3	BRL	72	30-150	9	30
Endosulfan II	20.2		µg/kg dry	8.42	26.3	BRL	77	30-150	2	30
Endosulfan II [2C]	18.7		µg/kg dry	8.42	26.3	BRL	71	30-150	9	30
4,4'-DDD (p,p')	19.9		µg/kg dry	8.42	26.3	BRL	76	30-150	0.5	30
4,4'-DDD (p,p') [2C]	18.2		µg/kg dry	8.42	26.3	BRL	69	30-150	9	30
Endosulfan sulfate	21.1		µg/kg dry	8.42	26.3	BRL	80	30-150	0.4	30
Endosulfan sulfate [2C]	19.8		µg/kg dry	8.42	26.3	BRL	75	30-150	8	30
4,4'-DDT (p,p')	22.0		µg/kg dry	8.42	26.3	BRL	84	30-150	0.9	30
4,4'-DDT (p,p') [2C]	18.5		µg/kg dry	8.42	26.3	BRL	70	30-150	9	30
Methoxychlor	23.2		µg/kg dry	8.42	26.3	BRL	88	30-150	0.1	30
Methoxychlor [2C]	19.8		µg/kg dry	8.42	26.3	BRL	75	30-150	6	30
Endrin ketone	18.8		µg/kg dry	8.42	26.3	BRL	71	30-150	0.04	30
Endrin ketone [2C]	17.6		µg/kg dry	8.42	26.3	BRL	67	30-150	7	30
Endrin aldehyde	22.3		µg/kg dry	8.42	26.3	BRL	85	30-150	1	30
Endrin aldehyde [2C]	22.6		µg/kg dry	8.42	26.3	BRL	86	30-150	8	30
alpha-Chlordane	18.1		µg/kg dry	5.26	26.3	BRL	69	30-150	1	30
alpha-Chlordane [2C]	17.0		µg/kg dry	5.26	26.3	BRL	65	30-150	9	30
Chlordane (gamma)(trans)	18.0		µg/kg dry	5.26	26.3	BRL	69	30-150	2	30
Chlordane (gamma)(trans) [2C]	17.1		µg/kg dry	5.26	26.3	BRL	65	30-150	8	30
Alachlor	20.5		µg/kg dry	5.26	26.3	BRL	78	30-150	4	30
Alachlor [2C]	19.4		µg/kg dry	5.26	26.3	BRL	74	30-150	13	30
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	5.08		µg/kg dry		10.5		48	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	5.56		µg/kg dry		10.5		53	30-150		
Surrogate: Decachlorobiphenyl (Sr)	7.59		µg/kg dry		10.5		72	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]	6.39		µg/kg dry		10.5		61	30-150		

Total Metals by EPA 6000/7000 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 6010C										
Batch 1720443 - SW846 3050B										
<u>Blank (1720443-BLK1)</u>	<u>Prepared: 11-Dec-17 Analyzed: 14-Dec-17</u>									
Arsenic	< 1.49		mg/kg wet	1.49						
<u>Duplicate (1720443-DUP1)</u>	<u>Prepared: 11-Dec-17 Analyzed: 14-Dec-17</u>									
Arsenic	12.8	QM4	mg/kg dry	1.55		3.90			106	20
<u>Matrix Spike (1720443-MS1)</u>	<u>Prepared: 11-Dec-17 Analyzed: 14-Dec-17</u>									
Arsenic	93.7	QM8	mg/kg dry	1.56	130	3.90	69	75-125		
<u>Matrix Spike Dup (1720443-MSD1)</u>	<u>Prepared: 11-Dec-17 Analyzed: 14-Dec-17</u>									
Arsenic	119	QM4	mg/kg dry	1.57	131	3.90	88	75-125	24	20
<u>Post Spike (1720443-PS1)</u>	<u>Prepared: 11-Dec-17 Analyzed: 14-Dec-17</u>									
Arsenic	123		mg/kg dry	1.57	131	3.90	91	80-120		
<u>Reference (1720443-SRM1)</u>	<u>Prepared: 11-Dec-17 Analyzed: 14-Dec-17</u>									
Arsenic	63.8		mg/kg wet	1.50	74.2		86	83-117		
<u>Reference (1720443-SRM2)</u>	<u>Prepared: 11-Dec-17 Analyzed: 14-Dec-17</u>									
Arsenic	63.0		mg/kg wet	1.50	74.1		85	83-117		

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>SM2540 G (11) Mod.</u>										
Batch 1720186 - General Preparation										
<u>Duplicate (1720186-DUP1)</u>				<u>Source: SC42066-04</u>		<u>Prepared & Analyzed: 04-Dec-17</u>				
% Solids	89.0		%			88.4			0.7	5

Subcontracted Analyses - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW8151A										
Batch 411796A - 411796-										
BLK (BZ50411-BLK)					Prepared: 05-Dec-17 Analyzed: 06-Dec-17					
2,4,5-TP (Silvex)	ND		ug/kg	83				-		
Dicamba	ND		ug/kg	83				-		
MCPP	ND		ug/kg	25000				-		
MCPA	ND		ug/kg	25000				-		
Dinoseb	ND		ug/kg	170				-		
Dichloroprop	ND		ug/kg	170				-		
Dalapon	ND		ug/kg	83				-		
2,4-D	ND		ug/kg	170				-		
2,4,5-T	ND		ug/kg	83				-		
2,4-DB	ND		ug/kg	1700				-		
Surrogate: % DCAA	39		ug/kg		1000			30-150		
LCSD (BZ50411-LCSD)					Prepared: 05-Dec-17 Analyzed: 06-Dec-17					
Dalapon	57.10		ug/kg	%	100		57	40-140		30
MCPA	17310		ug/kg	%	30000		58	40-140		30
Dinoseb	54.86		ug/kg	%	100		55	10-110		20
MCPP	19280		ug/kg	%	30000		64	40-140		30
Dicamba	60.90		ug/kg	%	100		61	40-140		30
2,4-D	128.0		ug/kg	%	200		64	40-140		30
2,4,5-TP (Silvex)	59.64		ug/kg	%	100		60	40-140		30
2,4,5-T	61.16		ug/kg	%	100		61	40-140		30
Dichloroprop	139.0		ug/kg	%	200		70	40-140		30
2,4-DB	593.7		ug/kg	%	1000		59	40-140		30
Surrogate: % DCAA	457.8		ug/kg		1000		46	30-150		
MS (BZ50411-MS)					Source: BZ50411	Prepared: 05-Dec-17 Analyzed: 06-Dec-17				
Dichloroprop	129.0		ug/kg	170	200		65	30-150		30
MCPP	21780		ug/kg	25000	30000		73	30-150		30
Dinoseb	65.34		ug/kg	170	100		65	10-110		20
Dicamba	55.90		ug/kg	83	100		56	30-150		30
Dalapon	55.47		ug/kg	83	100		55	30-150		30
2,4-D	120.5		ug/kg	170	200		60	30-150		30
2,4,5-TP (Silvex)	59.54		ug/kg	83	100		60	30-150		30
2,4,5-T	62.50		ug/kg	83	100		62	30-150		30
2,4-DB	705.9		ug/kg	1700	1000		71	30-150		30
MCPA	17790		ug/kg	25000	30000		59	30-150		30
Surrogate: % DCAA	467.0		ug/kg		1000		47	30-150		
MSD (BZ50411-MSD)					Source: BZ50411	Prepared: 05-Dec-17 Analyzed: 06-Dec-17				
2,4,5-T	51.67		%	%	100		52	30-150	17.5	30
MCPA	16500		%	%	30000		55	30-150	7.0	30
Dinoseb	57.47		%	%	100		57	10-110	13.1	20
Dichloroprop	111.4		%	%	200		56	30-150	14.9	30
Dicamba	48.35		%	%	100		48	30-150	15.4	30
Dalapon	44.53		%	%	100		45	30-150	20.0	30
2,4-DB	608.6		%	%	1000		61	30-150	15.2	30
2,4,5-TP (Silvex)	52.05		%	%	100		52	30-150	14.3	30
MCPP	22710		%	%	30000		76	30-150	4.0	30
2,4-D	104.5		%	%	200		52	30-150	14.3	30
Surrogate: % DCAA	418.5		%		1000		42	30-150		

This laboratory report is not valid without an authorized signature on the cover page.

Pesticides - Pesticide Breakdown Report

Analyte(s)	Column	% Breakdown	Limit
Batch S710637			
<u>Performance Mix (S710637-PEM1)</u>			
4,4'-DDT (p,p')	1	4.1	15.0
Endrin	1	6.1	15.0
4,4'-DDT (p,p')	2	2.3	15.0
Endrin	2	4.1	15.0
<u>Performance Mix (S710637-PEM2)</u>			
4,4'-DDT (p,p')	1	4.3	15.0
Endrin	1	6.8	15.0
4,4'-DDT (p,p')	2	2.2	15.0
Endrin	2	4.2	15.0

Notes and Definitions

QM4	Visual evaluation of the sample indicates the RPD is above the control limit due to a non-homogeneous sample matrix.
QM8	The spike recovery exceeded the QC control limits for the MS and/or MSD. The batch was accepted based upon acceptable PS and /or LCS recovery.
SGC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
[2C]	Indicates concentration was reported from the secondary, confirmation column.

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:

- ☒ Standard TAT - 7 to 10 business days
☐ Rush TAT - Date Needed: _____

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 60 days unless otherwise instructed

Packet Pg. 175

Report To: Geonight Inc.

Littletown MA 01460

1 March Ave Sudbury

Invoice To: _____

See Report to

Project No: 7877

Site Name: W. Sudbury Sand Pit Property

Location: Sudbury, MA

Sampler(s): CAS

State: MA

P.O. No.: _____

Quote/RON: _____

Telephone #: 978 679 1600

Project Mgr: Joel T. F. 110

F=Field Filtered 1= $\text{Na}_2\text{S}_2\text{O}_3$ 2= HCl 3= H_2SO_4 4= HNO_3 5= NaOH 6=Ascorbic Acid
7= CH_3OH 8= NaHSO_4 9=Deionized Water 10= H_3PO_4 11= _____ 12= _____

List Preservative Code below:

QA/QC Reporting Notes:
* additional charges may apply

DW=Drinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas

X1= _____ X2= _____ X3= _____

G=Grab

C=Composite

Type Composite Matrix

of VOA Vials
of Amber Glass
of Clear Glass
of Plastic

Arsenic 60100
Pesticides 8081
Herbicides 58151A

Check if chlorinated

MA DEP MCP CAM Report? ☒ Yes ☐ No
CT DPH RCP Report? ☐ Yes ☐ No
Standard ☐ No QC
DQA* ☐ No
ASP A* ☐ ASP B* ☐
NJ Reduced* ☐ NJ Full* ☐
Tier II* ☐ Tier IV* ☐
Other: _____
State-specific reporting standards: _____

Lab ID:	Sample ID:	Date:	Time:	Type	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analysis	Check if chlorinated	QA/QC Reporting Notes:
C4206601	SS-100-21	11/30/17	10:10	Soil	2	1			X	X	
02	SS-200-21		10:40		1				X	X	
03	SS-300-21		11:05		2				X	X	
04	SS-400-21		11:35		1				X	X	
05	SS-500-21		12:05		2				X	X	
06	SS-600-21		13:30		1				X	X	
07	SS-700-21		13:55		2				X	X	
08	SS-800-21		14:25		1				X	X	
Relinquished by: _____ Received by: _____ Date: _____ Time: _____											
Observed Temp °C: <u>25</u> EDD Format: <input type="checkbox"/> E-mail to: <u>JT Trifile@geonight.com</u>											
Condition upon receipt: Custody Seals: <input type="checkbox"/> Present <input type="checkbox"/> Intact <input type="checkbox"/> Broken											
<input type="checkbox"/> Ambient <input type="checkbox"/> Iced <input checked="" type="checkbox"/> Refrigerated <input type="checkbox"/> DI VOA Frozen <input type="checkbox"/> Soil Jar Frozen											

Batch Summary

'[none]'

Subcontracted Analyses

SC42066-01 (SS-1 (0-2))
 SC42066-03 (SS-3 (0-2))
 SC42066-05 (SS-5 (0-2))
 SC42066-07 (SS-7 (0-2))

1720176

General Chemistry Parameters

SC42066-01 (SS-1 (0-2))
 SC42066-02 (SS-2 (0-2))
 SC42066-03 (SS-3 (0-2))

1720186

General Chemistry Parameters

1720186-DUP1
 SC42066-04 (SS-4 (0-2))
 SC42066-05 (SS-5 (0-2))
 SC42066-06 (SS-6 (0-2))
 SC42066-07 (SS-7 (0-2))
 SC42066-08 (SS-8 (0-2))

1720199

Pesticides

1720199-BLK1
 1720199-BS1
 1720199-BSD1
 1720199-DUP1
 1720199-MS1
 1720199-MSD1
 SC42066-01 (SS-1 (0-2))
 SC42066-03 (SS-3 (0-2))
 SC42066-05 (SS-5 (0-2))
 SC42066-07 (SS-7 (0-2))

1720443

Total Metals by EPA 6000/7000 Series Methods

1720443-BLK1
 1720443-DUP1
 1720443-MS1
 1720443-MSD1
 1720443-PS1
 1720443-SRM1
 1720443-SRM2
 SC42066-01 (SS-1 (0-2))
 SC42066-02 (SS-2 (0-2))
 SC42066-03 (SS-3 (0-2))
 SC42066-04 (SS-4 (0-2))
 SC42066-05 (SS-5 (0-2))
 SC42066-06 (SS-6 (0-2))
 SC42066-07 (SS-7 (0-2))
 SC42066-08 (SS-8 (0-2))

411796A

Subcontracted Analyses

BZ50411-BLK
 BZ50411-LCSD
 BZ50411-MS
 BZ50411-MSD
 SC42066-01 (SS-1 (0-2))
 SC42066-03 (SS-3 (0-2))
 SC42066-05 (SS-5 (0-2))
 SC42066-07 (SS-7 (0-2))

S709808

Pesticides

S709808-CAL1
 S709808-CAL2
 S709808-CAL3
 S709808-CAL4
 S709808-CAL5
 S709808-CAL6
 S709808-CAL7
 S709808-CAL8
 S709808-CAL9
 S709808-CALA
 S709808-CALB
 S709808-CALC
 S709808-CALD
 S709808-CALE
 S709808-CALF
 S709808-ICV1
 S709808-ICV2
 S709808-ICV3
 S709808-LCV1
 S709808-LCV2
 S709808-LCV3

S710637

Pesticides

S710637-CCV1
 S710637-CCV2
 S710637-CCV3
 S710637-CCV4
 S710637-CCV5
 S710637-CCV6
 S710637-IBL1
 S710637-IBL2
 S710637-PEM1
 S710637-PEM2

☒ Final Report
☐ Revised Report

Report Date:
19-Dec-17 12:22

Laboratory Report SC42356

GeoInsight, Inc.
1 Monarch Drive, Suite 201
Littleton, MA 01460
Attn: Joel Trifilo

Project: Melone Property - North Rd - Sudbury, MA
Project #: 7877

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87936
Maine # MA138
New Hampshire # 2972/2538
New Jersey # MA011
New York # 11393
Pennsylvania # 68-04426/68-02924
Rhode Island # LAO00348
USDA # P330-15-00375
Vermont # VT-11393



Authorized by:
Kimberly Laplante
Quality Assurance Manager



Eurofins Spectrum Analytical holds primary certification in the State of Massachusetts for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of Massachusetts does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 15 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Eurofins Spectrum Analytical, Inc.

Eurofins Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Eurofins Spectrum Analytical, Inc. is currently accredited for the specific method or analyte indicated. Please refer to our Quality web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Eurofins Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey, Pennsylvania and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (PA-68-04426).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

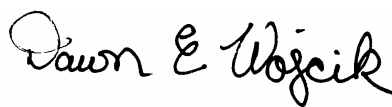
Sample Summary

Work Order: SC42356
Project: Melone Property - North Rd - Sudbury, MA
Project Number: 7877

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Received</u>
SC42356-01	MW-2	Ground Water	06-Dec-17 14:10	11-Dec-17 14:15

Attachment9.b: Draft Melone Property Subsurface Investigation - January 9 2018 (2630 : Geolnsight Report on environmental conditions)

MassDEP Analytical Protocol Certification Form

Laboratory Name: Eurofins Spectrum Analytical, Inc.			Project #: 7877		
Project Location: Melone Property - North Rd - Sudbury, MA			RTN:		
This form provides certifications for the following data set:			SC42356-01		
Matrices: Ground Water					
CAM Protocol					
✓	8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B
	8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A
	6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9012 Total Cyanide/PAC CAM VI A	9014 Total Cyanide/PAC CAM VI A
<i>Affirmative responses to questions A through F are required for Presumptive Certainty's status</i>					
A	Were all samples received in a condition consistent with those described on the Chain of Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?				✓ Yes No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?				✓ Yes No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?				✓ Yes No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?				✓ Yes No
E	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?				Yes No Yes No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to questions A through E)?				✓ Yes No
<i>Responses to questions G, H and I below are required for Presumptive Certainty's status</i>					
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?				Yes ✓ No
Data User Note: Data that achieve Presumptive Certainty's status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.					
H	Were all QC performance standards specified in the CAM protocol(s) achieved?				Yes ✓ No
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?				✓ Yes No
<i>All negative responses are addressed in a case narrative on the cover page of this report.</i>					
<p><i>I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.</i></p> <div style="text-align: right; margin-top: 20px;">  Dawn E. Wojcik Laboratory Director Date: 12/19/2017 </div>					

CASE NARRATIVE:

Data has been reported to the RDL. This report excludes estimated concentrations detected below the RDL and above the MDL (J-Flag).

All non-detects and all results below the reporting limit are reported as "<" (less than) the reporting limit in this report.

The samples were received 2.9 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group. If method or program required MS/MSD/Dup were not performed, sufficient sample was not provided to the laboratory.

MADEP has published a list of analytical methods (CAM) which provides a series of recommended protocols for the acquisition, analysis and reporting of analytical data in support of MCP decisions. "Presumptive Certainty" can be established only for those methods published by the MADEP in the MCP CAM. The compounds and/or elements reported were specifically requested by the client on the Chain of Custody and in some cases may not include the full analyte list as defined in the method. Regulatory limits may not be achieved if specific method and/or technique was not requested on the Chain of Custody.

According to WSC-CAM 5/2009 Rev.1, Table 11 A-1, recovery for some VOC analytes have been deemed potentially difficult. Although they may still be within the recommended recovery range, a range has been set based on historical control limits.

Some target analytes which are not listed as exceptions in the Summary of CAM Reporting Limits may exceed the recommended RL based on sample initial volume or weight provided, % moisture content, or responsiveness of a particular analyte to purge and trap instrumentation.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

SW846 8260C**Calibration:**

1712031

Analyte quantified by quadratic equation type calibration.

1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene

This affected the following samples:

1720675-BLK1
1720675-BS1
1720675-BSD1
MW-2
S710666-ICV1
S710833-CCV1

Samples:

S710833-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

Hexachlorobutadiene (-25.2%)

Analyte percent drift is outside individual acceptance criteria (20), but within overall method allowances.

n-Butylbenzene (-21.5%)

SW846 8260C**Samples:**

S710833-CCV1

This affected the following samples:

1720675-BLK1

1720675-BS1

1720675-BSD1

MW-2

Sample Acceptance Check Form

Client: GeoInsight, Inc. - Littleton, MA
 Project: Melone Property - North Rd - Sudbury, MA / 7877
 Work Order: SC42356
 Sample(s) received on: 12/11/2017

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Were custody seals present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Were custody seals intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Were samples received at a temperature of $\leq 6^{\circ}\text{C}$?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples refrigerated upon transfer to laboratory representative?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were sample containers received intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples accompanied by a Chain of Custody document?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did sample container labels agree with Chain of Custody document?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples received within method-specific holding times?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Summary of Hits

Lab ID:

Client ID:

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
-----------	--------	------	-----------------	-------	-------------------

No hits detected.

Please note that because there are no reporting limits associated with hazardous waste characterizations or micro analyses, this summary does not include hits from these analyses if included in this work order.

Attachment9.b: Draft Melone Property Subsurface Investigation - January 9 2018 (2630 : Geolnsight Report on environmental conditions)

Sample Identification

MW-2
SC42356-01

Client Project #
7877

Matrix
Ground Water

Collection Date/Time
06-Dec-17 14:10

Received
11-Dec-17

<u>CAS No.</u>	<u>Analyte(s)</u>	<u>Result</u>	<u>Flag</u>	<u>Units</u>	<u>*RDL</u>	<u>MDL</u>	<u>Dilution</u>	<u>Method Ref.</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Analyst</u>	<u>Batch</u>	<u>C</u>
Volatile Organic Compounds													
<u>Volatile Organic Compounds by SW846 8260</u>													
<u>Prepared by method SW846 5030 Water MS</u>													
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 1.00		µg/l	1.00	0.53	1	SW846 8260C	13-Dec-17	13-Dec-17	EK	1720675	
67-64-1	Acetone	< 10.0		µg/l	10.0	0.80	1	"	"	"	"	"	
107-13-1	Acrylonitrile	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
71-43-2	Benzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
108-86-1	Bromobenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-97-5	Bromochloromethane	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		µg/l	0.50	0.42	1	"	"	"	"	"	
75-25-2	Bromoform	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
74-83-9	Bromomethane	< 2.00		µg/l	2.00	0.90	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	< 2.00		µg/l	2.00	1.07	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	< 1.00		µg/l	1.00	0.41	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
75-15-0	Carbon disulfide	< 2.00		µg/l	2.00	0.41	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 1.00		µg/l	1.00	0.44	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 1.00		µg/l	1.00	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 2.00		µg/l	2.00	0.59	1	"	"	"	"	"	
67-66-3	Chloroform	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-87-3	Chloromethane	< 2.00		µg/l	2.00	0.37	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	< 2.00		µg/l	2.00	0.86	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		µg/l	0.50	0.32	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	< 0.50		µg/l	0.50	0.20	1	"	"	"	"	"	
74-95-3	Dibromomethane	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 1.00		µg/l	1.00	0.27	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	< 2.00		µg/l	2.00	0.58	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 1.00		µg/l	1.00	0.69	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	< 1.00		µg/l	1.00	0.21	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	< 1.00		µg/l	1.00	0.58	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.36	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.35	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	< 2.00		µg/l	2.00	0.53	1	"	"	"	"	"	

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Sample Identification

MW-2

SC42356-01

Client Project #

7877

Matrix

Ground Water

Collection Date/Time

06-Dec-17 14:10

Received

11-Dec-17

<i>CAS No.</i>	<i>Analyte(s)</i>	<i>Result</i>	<i>Flag</i>	<i>Units</i>	<i>*RDL</i>	<i>MDL</i>	<i>Dilution</i>	<i>Method Ref.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Analyst</i>	<i>Batch</i>	<i>C</i>
Volatile Organic Compounds													
Volatile Organic Compounds by SW846 8260													
98-82-8	Isopropylbenzene	< 1.00		µg/l	1.00	0.36	1	SW846 8260C	13-Dec-17	13-Dec-17	EK	1720675	
99-87-6	4-Isopropyltoluene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	< 1.00		µg/l	1.00	0.24	1	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 2.00		µg/l	2.00	0.52	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 2.00		µg/l	2.00	0.66	1	"	"	"	"	"	
91-20-3	Naphthalene	< 1.00		µg/l	1.00	0.35	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
100-42-5	Styrene	< 1.00		µg/l	1.00	0.40	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.50		µg/l	0.50	0.33	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 1.00		µg/l	1.00	0.57	1	"	"	"	"	"	
108-88-3	Toluene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
108-70-3	1,3,5-Trichlorobenzene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	< 1.00		µg/l	1.00	0.51	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 1.00		µg/l	1.00	0.50	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	< 1.00		µg/l	1.00	0.36	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	< 1.00		µg/l	1.00	0.43	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 1.00		µg/l	1.00	0.47	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 2.00		µg/l	2.00	0.38	1	"	"	"	"	"	
95-47-6	o-Xylene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	< 2.00		µg/l	2.00	1.06	1	"	"	"	"	"	
60-29-7	Ethyl ether	< 1.00		µg/l	1.00	0.37	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	< 10.0		µg/l	10.0	5.90	1	"	"	"	"	"	
123-91-1	1,4-Dioxane	< 20.0		µg/l	20.0	11.4	1	"	"	"	"	"	
110-57-6	trans-1,4-Dichloro-2-buten e	< 5.00		µg/l	5.00	0.82	1	"	"	"	"	"	
64-17-5	Ethanol	< 200		µg/l	200	30.9	1	"	"	"	"	"	

Surrogate recoveries:

460-00-4	4-Bromofluorobenzene	86			70-130 %		"	"	"	"	"	"	
2037-26-5	Toluene-d8	113			70-130 %		"	"	"	"	"	"	
17060-07-0	1,2-Dichloroethane-d4	114			70-130 %		"	"	"	"	"	"	
1868-53-7	Dibromofluoromethane	116			70-130 %		"	"	"	"	"	"	

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1720675 - SW846 5030 Water MS										
Blank (1720675-BLK1)					<u>Prepared & Analyzed: 13-Dec-17</u>					
1,1,2-Trichlorotrifluoroethane (Freon 113)	< 1.00		µg/l	1.00						
Acetone	< 10.0		µg/l	10.0						
Acrylonitrile	< 0.50		µg/l	0.50						
Benzene	< 1.00		µg/l	1.00						
Bromobenzene	< 1.00		µg/l	1.00						
Bromochloromethane	< 1.00		µg/l	1.00						
Bromodichloromethane	< 0.50		µg/l	0.50						
Bromoform	< 1.00		µg/l	1.00						
Bromomethane	< 2.00		µg/l	2.00						
2-Butanone (MEK)	< 2.00		µg/l	2.00						
n-Butylbenzene	< 1.00		µg/l	1.00						
sec-Butylbenzene	< 1.00		µg/l	1.00						
tert-Butylbenzene	< 1.00		µg/l	1.00						
Carbon disulfide	< 2.00		µg/l	2.00						
Carbon tetrachloride	< 1.00		µg/l	1.00						
Chlorobenzene	< 1.00		µg/l	1.00						
Chloroethane	< 2.00		µg/l	2.00						
Chloroform	< 1.00		µg/l	1.00						
Chloromethane	< 2.00		µg/l	2.00						
2-Chlorotoluene	< 1.00		µg/l	1.00						
4-Chlorotoluene	< 1.00		µg/l	1.00						
1,2-Dibromo-3-chloropropane	< 2.00		µg/l	2.00						
Dibromochloromethane	< 0.50		µg/l	0.50						
1,2-Dibromoethane (EDB)	< 0.50		µg/l	0.50						
Dibromomethane	< 1.00		µg/l	1.00						
1,2-Dichlorobenzene	< 1.00		µg/l	1.00						
1,3-Dichlorobenzene	< 1.00		µg/l	1.00						
1,4-Dichlorobenzene	< 1.00		µg/l	1.00						
Dichlorodifluoromethane (Freon12)	< 2.00		µg/l	2.00						
1,1-Dichloroethane	< 1.00		µg/l	1.00						
1,2-Dichloroethane	< 1.00		µg/l	1.00						
1,1-Dichloroethene	< 1.00		µg/l	1.00						
cis-1,2-Dichloroethene	< 1.00		µg/l	1.00						
trans-1,2-Dichloroethene	< 1.00		µg/l	1.00						
1,2-Dichloropropane	< 1.00		µg/l	1.00						
1,3-Dichloropropane	< 1.00		µg/l	1.00						
2,2-Dichloropropane	< 1.00		µg/l	1.00						
1,1-Dichloropropene	< 1.00		µg/l	1.00						
cis-1,3-Dichloropropene	< 0.50		µg/l	0.50						
trans-1,3-Dichloropropene	< 0.50		µg/l	0.50						
Ethylbenzene	< 1.00		µg/l	1.00						
Hexachlorobutadiene	< 0.50		µg/l	0.50						
2-Hexanone (MBK)	< 2.00		µg/l	2.00						
Isopropylbenzene	< 1.00		µg/l	1.00						
4-Isopropyltoluene	< 1.00		µg/l	1.00						
Methyl tert-butyl ether	< 1.00		µg/l	1.00						
4-Methyl-2-pentanone (MIBK)	< 2.00		µg/l	2.00						
Methylene chloride	< 2.00		µg/l	2.00						
Naphthalene	< 1.00		µg/l	1.00						
n-Propylbenzene	< 1.00		µg/l	1.00						

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1720675 - SW846 5030 Water MS										
Blank (1720675-BLK1)					<u>Prepared & Analyzed: 13-Dec-17</u>					
Styrene	< 1.00		µg/l	1.00						
1,1,1,2-Tetrachloroethane	< 1.00		µg/l	1.00						
1,1,2,2-Tetrachloroethane	< 0.50		µg/l	0.50						
Tetrachloroethene	< 1.00		µg/l	1.00						
Toluene	< 1.00		µg/l	1.00						
1,2,3-Trichlorobenzene	< 1.00		µg/l	1.00						
1,2,4-Trichlorobenzene	< 1.00		µg/l	1.00						
1,3,5-Trichlorobenzene	< 1.00		µg/l	1.00						
1,1,1-Trichloroethane	< 1.00		µg/l	1.00						
1,1,2-Trichloroethane	< 1.00		µg/l	1.00						
Trichloroethene	< 1.00		µg/l	1.00						
Trichlorofluoromethane (Freon 11)	< 1.00		µg/l	1.00						
1,2,3-Trichloropropane	< 1.00		µg/l	1.00						
1,2,4-Trimethylbenzene	< 1.00		µg/l	1.00						
1,3,5-Trimethylbenzene	< 1.00		µg/l	1.00						
Vinyl chloride	< 1.00		µg/l	1.00						
m,p-Xylene	< 2.00		µg/l	2.00						
o-Xylene	< 1.00		µg/l	1.00						
Tetrahydrofuran	< 2.00		µg/l	2.00						
Ethyl ether	< 1.00		µg/l	1.00						
Tert-amyl methyl ether	< 1.00		µg/l	1.00						
Ethyl tert-butyl ether	< 1.00		µg/l	1.00						
Di-isopropyl ether	< 1.00		µg/l	1.00						
Tert-Butanol / butyl alcohol	< 10.0		µg/l	10.0						
1,4-Dioxane	< 20.0		µg/l	20.0						
trans-1,4-Dichloro-2-butene	< 5.00		µg/l	5.00						
Ethanol	< 200		µg/l	200						
Surrogate: 4-Bromofluorobenzene	43.1		µg/l		50.0		86	70-130		
Surrogate: Toluene-d8	55.8		µg/l		50.0		112	70-130		
Surrogate: 1,2-Dichloroethane-d4	59.0		µg/l		50.0		118	70-130		
Surrogate: Dibromofluoromethane	58.3		µg/l		50.0		117	70-130		
LCS (1720675-BS1)					<u>Prepared & Analyzed: 13-Dec-17</u>					
1,1,2-Trichlorotrifluoroethane (Freon 113)	23.6		µg/l		20.0		118	70-130		
Acetone	24.7		µg/l		20.0		123	70-130		
Acrylonitrile	23.0		µg/l		20.0		115	70-130		
Benzene	23.5		µg/l		20.0		117	70-130		
Bromobenzene	20.5		µg/l		20.0		102	70-130		
Bromochloromethane	23.1		µg/l		20.0		116	70-130		
Bromodichloromethane	23.5		µg/l		20.0		118	70-130		
Bromoform	20.3		µg/l		20.0		102	70-130		
Bromomethane	23.6		µg/l		20.0		118	70-130		
2-Butanone (MEK)	23.1		µg/l		20.0		115	70-130		
n-Butylbenzene	16.6		µg/l		20.0		83	70-130		
sec-Butylbenzene	18.6		µg/l		20.0		93	70-130		
tert-Butylbenzene	18.2		µg/l		20.0		91	70-130		
Carbon disulfide	24.9		µg/l		20.0		124	70-130		
Carbon tetrachloride	22.3		µg/l		20.0		112	70-130		
Chlorobenzene	19.6		µg/l		20.0		98	70-130		
Chloroethane	22.3		µg/l		20.0		111	70-130		
Chloroform	23.2		µg/l		20.0		116	70-130		

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1720675 - SW846 5030 Water MS										
LCS (1720675-BS1)					Prepared & Analyzed: 13-Dec-17					
Chloromethane	23.7		µg/l		20.0		118	70-130		
2-Chlorotoluene	19.6		µg/l		20.0		98	70-130		
4-Chlorotoluene	19.5		µg/l		20.0		98	70-130		
1,2-Dibromo-3-chloropropane	20.6		µg/l		20.0		103	70-130		
Dibromochloromethane	24.1		µg/l		20.0		120	70-130		
1,2-Dibromoethane (EDB)	24.7		µg/l		20.0		124	70-130		
Dibromomethane	23.8		µg/l		20.0		119	70-130		
1,2-Dichlorobenzene	20.4		µg/l		20.0		102	70-130		
1,3-Dichlorobenzene	19.0		µg/l		20.0		95	70-130		
1,4-Dichlorobenzene	18.4		µg/l		20.0		92	70-130		
Dichlorodifluoromethane (Freon12)	25.4		µg/l		20.0		127	70-130		
1,1-Dichloroethane	24.2		µg/l		20.0		121	70-130		
1,2-Dichloroethane	23.1		µg/l		20.0		115	70-130		
1,1-Dichloroethene	23.9		µg/l		20.0		120	70-130		
cis-1,2-Dichloroethene	23.4		µg/l		20.0		117	70-130		
trans-1,2-Dichloroethene	23.9		µg/l		20.0		119	70-130		
1,2-Dichloropropane	22.4		µg/l		20.0		112	70-130		
1,3-Dichloropropane	24.0		µg/l		20.0		120	70-130		
2,2-Dichloropropane	23.4		µg/l		20.0		117	70-130		
1,1-Dichloropropene	21.1		µg/l		20.0		105	70-130		
cis-1,3-Dichloropropene	23.1		µg/l		20.0		116	70-130		
trans-1,3-Dichloropropene	24.3		µg/l		20.0		122	70-130		
Ethylbenzene	19.5		µg/l		20.0		98	70-130		
Hexachlorobutadiene	15.6		µg/l		20.0		78	70-130		
2-Hexanone (MBK)	22.2		µg/l		20.0		111	70-130		
Isopropylbenzene	19.0		µg/l		20.0		95	70-130		
4-Isopropyltoluene	17.0		µg/l		20.0		85	70-130		
Methyl tert-butyl ether	24.0		µg/l		20.0		120	70-130		
4-Methyl-2-pentanone (MIBK)	19.5		µg/l		20.0		97	70-130		
Methylene chloride	24.0		µg/l		20.0		120	70-130		
Naphthalene	16.8		µg/l		20.0		84	70-130		
n-Propylbenzene	18.4		µg/l		20.0		92	70-130		
Styrene	18.9		µg/l		20.0		95	70-130		
1,1,1,2-Tetrachloroethane	22.1		µg/l		20.0		110	70-130		
1,1,2,2-Tetrachloroethane	22.0		µg/l		20.0		110	70-130		
Tetrachloroethene	23.2		µg/l		20.0		116	70-130		
Toluene	25.8		µg/l		20.0		129	70-130		
1,2,3-Trichlorobenzene	18.9		µg/l		20.0		95	70-130		
1,2,4-Trichlorobenzene	18.1		µg/l		20.0		91	70-130		
1,3,5-Trichlorobenzene	16.9		µg/l		20.0		85	70-130		
1,1,1-Trichloroethane	22.5		µg/l		20.0		112	70-130		
1,1,2-Trichloroethane	24.7		µg/l		20.0		124	70-130		
Trichloroethene	22.5		µg/l		20.0		112	70-130		
Trichlorofluoromethane (Freon 11)	23.5		µg/l		20.0		118	70-130		
1,2,3-Trichloropropane	21.8		µg/l		20.0		109	70-130		
1,2,4-Trimethylbenzene	18.6		µg/l		20.0		93	70-130		
1,3,5-Trimethylbenzene	18.5		µg/l		20.0		93	70-130		
Vinyl chloride	22.1		µg/l		20.0		110	70-130		
m,p-Xylene	19.6		µg/l		20.0		98	70-130		
o-Xylene	20.1		µg/l		20.0		100	70-130		

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1720675 - SW846 5030 Water MS										
LCS (1720675-BS1)					Prepared & Analyzed: 13-Dec-17					
Tetrahydrofuran	23.0		µg/l		20.0		115	70-130		
Ethyl ether	22.3		µg/l		20.0		112	70-130		
Tert-amyl methyl ether	25.0		µg/l		20.0		125	70-130		
Ethyl tert-butyl ether	24.5		µg/l		20.0		123	70-130		
Di-isopropyl ether	24.2		µg/l		20.0		121	70-130		
Tert-Butanol / butyl alcohol	260		µg/l		200		130	70-130		
1,4-Dioxane	205		µg/l		200		103	70-130		
trans-1,4-Dichloro-2-butene	20.0		µg/l		20.0		100	70-130		
Ethanol	491		µg/l		400		123	70-130		
Surrogate: 4-Bromofluorobenzene	53.4		µg/l		50.0		107	70-130		
Surrogate: Toluene-d8	55.7		µg/l		50.0		111	70-130		
Surrogate: 1,2-Dichloroethane-d4	50.6		µg/l		50.0		101	70-130		
Surrogate: Dibromofluoromethane	54.7		µg/l		50.0		109	70-130		
LCS Dup (1720675-BSD1)					Prepared & Analyzed: 13-Dec-17					
1,1,2-Trichlorotrifluoroethane (Freon 113)	20.8		µg/l		20.0		104	70-130	13	20
Acetone	23.7		µg/l		20.0		118	70-130	4	20
Acrylonitrile	23.0		µg/l		20.0		115	70-130	0.09	20
Benzene	22.5		µg/l		20.0		113	70-130	4	20
Bromobenzene	19.6		µg/l		20.0		98	70-130	4	20
Bromochloromethane	21.8		µg/l		20.0		109	70-130	6	20
Bromodichloromethane	21.5		µg/l		20.0		108	70-130	9	20
Bromoform	19.3		µg/l		20.0		97	70-130	5	20
Bromomethane	22.5		µg/l		20.0		112	70-130	5	20
2-Butanone (MEK)	22.7		µg/l		20.0		114	70-130	2	20
n-Butylbenzene	15.7		µg/l		20.0		78	70-130	6	20
sec-Butylbenzene	16.9		µg/l		20.0		84	70-130	10	20
tert-Butylbenzene	16.8		µg/l		20.0		84	70-130	8	20
Carbon disulfide	22.8		µg/l		20.0		114	70-130	9	20
Carbon tetrachloride	20.3		µg/l		20.0		102	70-130	9	20
Chlorobenzene	18.2		µg/l		20.0		91	70-130	7	20
Chloroethane	20.9		µg/l		20.0		104	70-130	7	20
Chloroform	21.6		µg/l		20.0		108	70-130	7	20
Chloromethane	21.1		µg/l		20.0		106	70-130	11	20
2-Chlorotoluene	17.7		µg/l		20.0		88	70-130	10	20
4-Chlorotoluene	17.9		µg/l		20.0		89	70-130	9	20
1,2-Dibromo-3-chloropropane	19.1		µg/l		20.0		96	70-130	7	20
Dibromochloromethane	23.2		µg/l		20.0		116	70-130	4	20
1,2-Dibromoethane (EDB)	23.8		µg/l		20.0		119	70-130	4	20
Dibromomethane	23.1		µg/l		20.0		115	70-130	3	20
1,2-Dichlorobenzene	19.5		µg/l		20.0		97	70-130	5	20
1,3-Dichlorobenzene	17.9		µg/l		20.0		89	70-130	6	20
1,4-Dichlorobenzene	17.5		µg/l		20.0		88	70-130	5	20
Dichlorodifluoromethane (Freon12)	22.6		µg/l		20.0		113	70-130	12	20
1,1-Dichloroethane	22.3		µg/l		20.0		111	70-130	8	20
1,2-Dichloroethane	21.5		µg/l		20.0		107	70-130	7	20
1,1-Dichloroethene	21.9		µg/l		20.0		110	70-130	9	20
cis-1,2-Dichloroethene	22.3		µg/l		20.0		111	70-130	5	20
trans-1,2-Dichloroethene	22.3		µg/l		20.0		111	70-130	7	20
1,2-Dichloropropane	22.2		µg/l		20.0		111	70-130	0.8	20
1,3-Dichloropropane	23.3		µg/l		20.0		116	70-130	3	20

This laboratory report is not valid without an authorized signature on the cover page.

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1720675 - SW846 5030 Water MS										
LCS Dup (1720675-BSD1)					Prepared & Analyzed: 13-Dec-17					
2,2-Dichloropropane	21.3		µg/l		20.0		106	70-130	9	20
1,1-Dichloropropene	19.6		µg/l		20.0		98	70-130	7	20
cis-1,3-Dichloropropene	22.6		µg/l		20.0		113	70-130	2	20
trans-1,3-Dichloropropene	23.4		µg/l		20.0		117	70-130	4	20
Ethylbenzene	18.0		µg/l		20.0		90	70-130	8	20
Hexachlorobutadiene	15.0		µg/l		20.0		75	70-130	4	20
2-Hexanone (MBK)	22.4		µg/l		20.0		112	70-130	1	20
Isopropylbenzene	17.9		µg/l		20.0		89	70-130	6	20
4-Isopropyltoluene	16.1		µg/l		20.0		81	70-130	5	20
Methyl tert-butyl ether	23.6		µg/l		20.0		118	70-130	2	20
4-Methyl-2-pentanone (MIBK)	20.0		µg/l		20.0		100	70-130	3	20
Methylene chloride	22.8		µg/l		20.0		114	70-130	5	20
Naphthalene	17.9		µg/l		20.0		90	70-130	6	20
n-Propylbenzene	17.1		µg/l		20.0		85	70-130	7	20
Styrene	17.9		µg/l		20.0		89	70-130	6	20
1,1,1,2-Tetrachloroethane	20.9		µg/l		20.0		104	70-130	6	20
1,1,2,2-Tetrachloroethane	21.2		µg/l		20.0		106	70-130	3	20
Tetrachloroethene	21.1		µg/l		20.0		105	70-130	10	20
Toluene	23.8		µg/l		20.0		119	70-130	8	20
1,2,3-Trichlorobenzene	18.4		µg/l		20.0		92	70-130	3	20
1,2,4-Trichlorobenzene	17.4		µg/l		20.0		87	70-130	4	20
1,3,5-Trichlorobenzene	16.6		µg/l		20.0		83	70-130	2	20
1,1,1-Trichloroethane	20.7		µg/l		20.0		103	70-130	8	20
1,1,2-Trichloroethane	23.4		µg/l		20.0		117	70-130	6	20
Trichloroethene	21.3		µg/l		20.0		106	70-130	5	20
Trichlorofluoromethane (Freon 11)	21.2		µg/l		20.0		106	70-130	11	20
1,2,3-Trichloropropane	21.0		µg/l		20.0		105	70-130	4	20
1,2,4-Trimethylbenzene	17.1		µg/l		20.0		86	70-130	8	20
1,3,5-Trimethylbenzene	16.7		µg/l		20.0		84	70-130	10	20
Vinyl chloride	22.2		µg/l		20.0		111	70-130	0.7	20
m,p-Xylene	17.5		µg/l		20.0		87	70-130	11	20
o-Xylene	18.6		µg/l		20.0		93	70-130	8	20
Tetrahydrofuran	23.2		µg/l		20.0		116	70-130	0.8	20
Ethyl ether	22.8		µg/l		20.0		114	70-130	2	20
Tert-amyl methyl ether	23.8		µg/l		20.0		119	70-130	5	20
Ethyl tert-butyl ether	24.0		µg/l		20.0		120	70-130	2	20
Di-isopropyl ether	23.8		µg/l		20.0		119	70-130	2	20
Tert-Butanol / butyl alcohol	235		µg/l		200		117	70-130	10	20
1,4-Dioxane	198		µg/l		200		99	70-130	3	20
trans-1,4-Dichloro-2-butene	19.2		µg/l		20.0		96	70-130	4	20
Ethanol	467		µg/l		400		117	70-130	5	20
Surrogate: 4-Bromofluorobenzene	52.7		µg/l		50.0		105	70-130		
Surrogate: Toluene-d8	55.7		µg/l		50.0		111	70-130		
Surrogate: 1,2-Dichloroethane-d4	50.7		µg/l		50.0		101	70-130		
Surrogate: Dibromofluoromethane	52.9		µg/l		50.0		106	70-130		

Notes and Definitions

dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.



SPECTRUM ANALYTICAL, INC.
Featuring
HANBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:

- ☒ Standard TAT - 7 to 10 business days
☐ Rush TAT + Date Needed: _____

All TAT's subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 60 days unless otherwise instructed

Packet Pg. 192

Report To: Geo Insight Inc.

Invoice To: See April 16

Project No: 7877

61460
1 Mammoth Ave Suite 301

Site Name: Melrose Property

Location: Sudbury, MA

State: MA

Telephone #: 978 675 1600
Project Mgr: Joe T. H. 7877

P.O. No.: _____
Quote/RON: _____

F=Field Filtered 1=Na₂S₂O₃ 2=HCl 3=H₂SO₄ 4=HNO₃ 5=NaOH 6=Ascorbic Acid
7=CH₃OH 8=NaHSO₄ 9=Deionized Water 10=H₃PO₄ 11= _____ 12= _____

List Preservative Code below:

HCl

Analysis

QA/QC Reporting Notes:
* additional charges may apply

DW=Drinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas

X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab ID: SL4235621 Sample ID: MW-2 Date: 12/16/17 Time: 1410

Type: Grab Matrix: 3

of VOA Vials: 3
of Amber Glass: _____
of Clear Glass: _____
of Plastic: _____

Observed Temp °C: 2.9
Corrected IR ID #: 2.9

Check if chlorinated

MA DEP MCP CAM Report? ☒ Yes ☐ No
CT DPH RCP Report? ☐ Yes ☐ No
Standard ☐ No QC
DQA* ☐ ASP A* ☐ ASP B*
NJ Reduced* ☐ NJ Full*
Tier II* ☐ Tier IV*
Other: _____
State-specific reporting standards: _____

Relinquished by: _____

Received by: _____

Date: 12-11-17

Time: 1005

Temp °C: 2.9

EDD format: ☒ E-mail to: Joe T. H. 7877

Condition upon receipt: ☒ Present ☐ Intact ☐ Broken

Custody Seals: ☐ Present ☐ Intact ☐ Broken

Refrigerated ☒ DI VOA Frozen ☐ Soil Jar Frozen

Batch Summary

1720675

Volatile Organic Compounds

1720675-BLK1

1720675-BS1

1720675-BSD1

SC42356-01 (MW-2)

S710666

Volatile Organic Compounds

S710666-CAL1

S710666-CAL2

S710666-CAL3

S710666-CAL4

S710666-CAL5

S710666-CAL6

S710666-CAL7

S710666-CAL8

S710666-CAL9

S710666-ICV1

S710666-LCV1

S710666-LCV2

S710666-LCV3

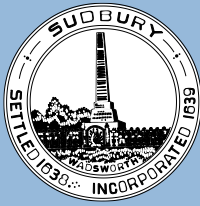
S710666-TUN1

S710833

Volatile Organic Compounds

S710833-CCV1

S710833-TUN1



SUDBURY BOARD OF SELECTMEN

Tuesday, January 23, 2018

MISCELLANEOUS (UNTIMED)**10: Budget comparison options**REQUESTOR SECTION

Date of request:

Requested by: Patty Golden

Formal Title: Discuss budget comparison options (cont. from 1/9 meeting)

Recommendations/Suggested Motion/Vote: Discuss budget comparison options (cont. from 1/9 meeting)

Background Information:
attached documents

Financial impact expected:

Approximate agenda time requested:

Representative(s) expected to attend meeting:

Review:

Patty Golden	Pending
Melissa Murphy-Rodrigues	Pending
Barbara Saint Andre	Pending
Robert C. Haarde	Pending
Board of Selectmen	Pending

01/23/2018 7:30 PM

District Analysis--Boston Area Schools (Considated Districts in Top 20) vs. Sudbury--comparable total school enrollment																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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District Analysis and Review Tool (DART)

DART Detail: Staffing and Finance

Select district 1,
then select districts 2-4 (optional)*

1. Sudbury
2. Winchester
3. Wayland
4. Belmont

Reports:

[District at a Glance](#)
[Finance Charts](#)
[Out of District](#)
[District Staff](#)
[Expenditure By Source of Funds](#)
[Revenues](#)
[Teachers](#)
[Summary Per Pupil Expenditures](#)
[Revolving Funds](#)
[SPED Staff](#)
[Detail Per Pupil Expenditures](#)
[Finance Summary](#)
[Median Per Pupil Expenditure by District Size](#)
[Help and Resources](#)

* Reports with 5 years of data for District 1 only are District at a Glance, Finance Summary, Expenditure by Source
Other reports have 3 years of data for Districts 1-4

When you select District 1, the list below shows ten MA districts most similar based on enrollment size and special population percentages.

Orange row: District 1 **Blue row:** Highest performing of the other districts

Districts With Similar Student Demographics	Grade Span	2017 Enrollment & Subgroup Percentages				2017 Performance Grades 3-8 Next Gen MCAS				2017 Performance Grade 10 Legacy MCAS			
		Total Enrolled	Econ Disadv	SWD	ELL	% Meeting or Exceeding		Median Student Growth Percentile		% Proficient or Advanced		Median Student Growth Percentile	
						ELA	Math	ELA	Math	ELA	Math	ELA	Math
*Boxford	PK - 06	755	3.7	19.1	0.8	65%	75%	44.5	60.0				
*Concord	PK - 08	2,108	5.5	16.6	1.9	80%	79%	65.0	55.0				
*Kingston	KG - 06	1,016	16.1	16.5	1.5	49%	56%	55.5	59.0				
*Lincoln	PK - 08	1,200	5.0	17.8	2.7	62%	62%	54.0	60.0				
*Middleton	PK - 06	699	7.9	18.9	1.1	68%	72%	56.0	71.0				
*Norfolk	PK - 06	937	6.2	14.5	1.8	63%	74%	46.0	67.0				
*Northborough	PK - 08	1,713	9.7	18.2	5.1	61%	62%	51.0	58.0				
*Somerset	PK - 08	1,792	21.1	14.1	0.8	47%	45%	42.0	52.0				
*Southborough	PK - 08	1,295	3.9	14.1	6.1	76%	82%	55.0	66.0				
*Sudbury	PK - 08	2,803	5.0	14.9	1.1	73%	71%	52.0	45.0				
*Wrentham	PK - 06	1,031	9.1	15.0	1.3	67%	70%	64.0	52.0				

Note: Because comparable financial data is not available for charter schools, DART finance and staffing reports do not include them.



Sudbury - District at a Glance

District Data	2013	2014	2015	2016	2017	State
Number of schools	5	5	5	5	5	
Enrollment	3,006	2,925	2,874	2,822	2,803	953,748
<i>Special Populations</i>						
Economically disadvantaged*	--	--	--	5%	5%	30%
Students with disabilities	13%	14%	15%	16%	15%	17%
English language learners	--	--	--	--	1%	9%
First language not English	2%	3%	2%	2%	3%	20%
<i>Race/Ethnicity</i>						
White	84%	83%	81%	80%	79%	61%
African-American/Black	2%	2%	2%	3%	3%	9%
Hispanic/Latino	2%	3%	3%	3%	3%	19%
Asian	6%	6%	8%	8%	9%	7%
Multi-race	5%	5%	6%	6%	6%	3%
Native American	--	--	--	--	--	--
Hawaiian/Pacific	--	--	--	--	--	--
Staffing						
Admin & instructional leaders (FTEs) (district & school, incl. instr. coaches)	22.9	25.9	26.5	28.9	32.1	
Students per admin/leadership staff	131:1	113:1	108:1	98:1	87:1	
Teachers (FTEs)	214.1	211.7	210.9	204.5	206.9	
Students per teacher	14.0 :1	13.8 :1	13.6 :1	13.8 :1	13.5 :1	13.2 :1
Finance						2016
Expenditure per in-district pupil	\$12,557	\$13,511	\$14,168	\$14,861		\$15,024
Teacher average salary	\$70,279	\$73,473	\$76,991	\$83,234		\$76,442
% over/under req'd net school spending	32.4%	35.5%	43.0%	47.8%		
Chapter 70 as % of req'd NSS	17%	17%	17%	18%	18%	
Performance** 2013-2016						
ELA % proficient or higher	88%	86%	89%	88%		
Math % proficient or higher	81%	80%	82%	82%		
ELA median SGP	52.0	50.0				
Math median SGP	55.0	54.0				
Performance 2017						
	<i>Meets/exceeds Expectations</i>		<i>Median student growth percentile</i>			
	ELA	Math	ELA	Math		
Grades 3-8	73%	71%	52.0	45.0		
State	49%	48%	50.0	50.0		
Grade 10						
State	91%	79%	50.0	50.0		

* In 2015, "economically disadvantaged," based on direct certification by Health and Human Services, replaced "low-income," based on family income self-reporting for the federal lunch program.

** In 2013 and 2014, students took MCAS. In 2015 and 2016, some students in grades 3-8 took PARCC instead, and these performance results are aligned across MCAS and PARCC. In 2017, the Department introduced NextGen MCAS for grades 3-8, establishing a new baseline. 10th graders will take MCAS until 2019.



District Staffing 2015-2017

	Sudbury			Winchester			Wayland			Belmont			State		
Data Definitions	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016*	2017
Number of schools	5	5	5	7	7	7	5	5	5	6	6	6			
All students	2,874	2,822	2,803	4,505	4,591	4,623	2,659	2,657	2,646	4,283	4,362	4,466	955,844		953,748
District administrators	7.5	8.9	11.1	4.9	4.9	5.6	8.8	8.8	9.3	9.8	9.4	9.4	2,235		2,286
Students:staff	383:1	317:1	253:1	919:1	937:1	826:1	302:1	302:1	285:1	437:1	464:1	475:1	428:1		417:1
Other district instructional leaders	1.0	1.0	1.0	6.2	6.2	6.0	6.8	6.8	7.5	5.6	6.0	6.0	1,073		1,131
Students:staff	2,874:1	2,822:1	2,803:1	727:1	740:1	771:1	391:1	391:1	353:1	765:1	727:1	744:1	891:1		843:1
School administrators	10.0	12.0	12.0	20.0	20.0	20.5	14.1	14.0	14.7	10.6	11.0	10.7	4,515		4,645
Students:staff	287:1	235:1	234:1	225:1	230:1	226:1	188:1	190:1	181:1	404:1	397:1	418:1	212:1		205:1
Instructional coaches	8.0	7.0	8.0	--	--	1.0	3.0	3.4	3.9	2.9	3.0	2.8	1,060		1,138
Students:staff	359:1	403:1	350:1	--	--	4,623:1	886:1	793:1	687:1	1,487:1	1,457:1	1,595:1	902:1		838:1
Teachers	210.9	204.5	206.9	332.8	334.4	351.8	205.0	207.8	206.8	248.6	260.0	268.6	71,806		72,062
Students:staff	13.6:1	13.8:1	13.5:1	13.5:1	13.7:1	13.1:1	13.0:1	12.8:1	12.8:1	17.2:1	16.8:1	16.6:1	13.3:1		13.2:1
Long-term subs	--	--	--	4.9	7.8	1.0	--	--	--	12.4	9.0	8.0	567		489
Students:staff	--	--	--	917:1	586:1	4,623:1	--	--	--	345:1	485:1	558:1	1,687:1		1,951:1
Paraprofessionals	49.9	49.9	50.3	95.0	96.1	82.8	94.7	98.3	107.0	94.8	94.8	87.5	24,182		25,037
Students:staff	58:1	57:1	56:1	47:1	48:1	56:1	28:1	27:1	25:1	45:1	46:1	51:1	40:1		38:1
Tutors	23.9	32.7	30.9	--	--	--	3.5	4.8	4.8	1.6	1.0	1.0	1,260		975
Students:staff	120:1	86:1	91:1	--	--	--	760:1	554:1	551:1	2,677:1	4,362:1	4,466:1	759:1		978:1
Instructional support	8.5	15.7	15.7	21.1	21.1	21.3	14.0	14.2	14.3	15.5	16.8	18.7	4,544		4,727
Students:staff	339:1	180:1	178:1	214:1	218:1	217:1	190:1	187:1	186:1	276:1	259:1	239:1	210:1		202:1
SPED instructional support	8.8	2.0	1.0	11.5	11.5	12.5	4.7	5.1	5.4	5.1	3.9	4.4	1,325		1,339
Students:staff	327:1	1,411:1	2,803:1	392:1	399:1	370:1	572:1	521:1	495:1	838:1	1,114:1	1,012:1	721:1		712:1
SPED related staff	19.6	18.2	23.6	19.6	19.6	19.6	8.9	9.4	10.6	10.7	10.6	10.7	4,379		4,821
Students:staff	147:1	155:1	119:1	230:1	234:1	236:1	297:1	281:1	249:1	400:1	413:1	417:1	218:1		198:1
Medical/health	5.5	5.0	5.6	8.0	8.0	8.0	1.0	1.0	1.0	5.9	7.5	7.9	1,952		1,979
Students:staff	523:1	564:1	501:1	563:1	574:1	578:1	2,659:1	2,657:1	2,646:1	726:1	582:1	565:1	490:1		482:1
Clerks/secretaries	19.7	20.1	19.6	28.1	26.5	28.5	31.3	31.0	32.0	27.1	26.2	27.5	8,378		8,196
Students:staff	146:1	140:1	143:1	160:1	173:1	162:1	85:1	86:1	83:1	158:1	167:1	162:1	114:1		116:1
Technology support	4.4	4.0	3.0	4.4	4.4	4.4	9.1	8.1	8.5	9.0	9.0	8.8	1,333		1,318
Students:staff	653:1	706:1	934:1	1,024:1	1,043:1	1,051:1	292:1	330:1	313:1	476:1	485:1	509:1	717:1		723:1

* State-wide totals for 2016 staffing could only be imputed because of missing district data. With 2017 data now available, DART doesn't use the 2016 imputed data.



Teachers 2015-2017

<i>all funding sources included FTEs (full-time equivalents)</i>	Sudbury			Winchester			Wayland			Belmont			State		
Data Definitions	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016*	2017
<i>All students</i>	2,874	2,822	2,803	4,505	4,591	4,623	2,659	2,657	2,646	4,283	4,362	4,466	955,844		953,748
Teachers (FTEs)															
Teachers	210.9	204.5	206.9	332.8	334.4	351.8	205.0	207.8	206.8	248.6	260.0	268.6	71,806.4		72,062.2
<i>All students:all teachers</i>	13.6 :1	13.8 :1	13.5 :1	13.5 :1	13.7 :1	13.1 :1	13.0 :1	12.8 :1	12.8 :1	17.2 :1	16.8 :1	16.6 :1	13.3 :1		13.2 :1
Long-term subs	--	--	--	4.9	7.8	1.0	--	--	--	12.4	9.0	8.0	567		489
General Education															
ELA/Reading/Math/Science/ Social Studies	45.6	40.0	175.1	216.4	214.1	242.1	72.8	73.7	124.2	93.9	103.7	181.0	34,173.6		44,697.5
<i>All students:subject teachers</i>	63.0 :1	70.6 :1	16.0 :1	20.8 :1	21.4 :1	19.1 :1	36.5 :1	36.1 :1	21.3 :1	45.6 :1	42.1 :1	24.7 :1	28.0 :1		21.3 :1
Arts/Languages	20.1	19.0	20.1	36.4	35.5	38.0	29.3	29.8	29.4	36.6	36.5	37.3	7,201.2		7,165.4
<i>All students:subject teachers</i>	143.3 :1	148.5 :1	139.7 :1	123.9 :1	129.1 :1	121.8 :1	90.9 :1	89.1 :1	90.1 :1	117.0 :1	119.4 :1	119.7 :1	132.7 :1		133.1 :1
Other subjects	110.2	132.1	11.5	32.3	31.2	32.0	70.3	70.5	18.0	88.4	88.4	17.2	18,443.3		8,593.6
<i>All students:subject teachers</i>	26.1 :1	21.4 :1	242.7 :1	139.5 :1	147.3 :1	144.6 :1	37.9 :1	37.7 :1	146.8 :1	48.4 :1	49.3 :1	259.0 :1	51.8 :1		111.0 :1
All general education teachers	175.8	191.0	206.7	285.0	280.8	312.1	172.3	174.0	171.6	218.9	228.7	235.6	59,818.1		60,456.5
<i>All students:general ed teachers</i>	16.3 :1	14.8 :1	13.6 :1	15.8 :1	16.4 :1	14.8 :1	15.4 :1	15.3 :1	15.4 :1	19.6 :1	19.1 :1	19.0 :1	16.0 :1		15.8 :1

* State-wide totals for 2016 staffing could only be imputed because of missing district data. With 2017 data now available, DART doesn't use the 2016 imputed data.



Teachers 2015-2017

<i>all funding sources included FTEs (full-time equivalents)</i>	Sudbury			Winchester			Wayland			Belmont			State		
Data Definitions	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016*	2017
Students															
Vocational-technical	--	--	--	--	--	--	--	--	--	--	--	--	57,820		60,993
Students with disabilities (SWDs) in-district	409	424	402	644	676	740	471	475	459	322	360	366	154,513		156,764
English language learners (ELLs)	12	24	31	165	180	166	32	56	65	225	257	279	81,146		90,204
Vocational-technical															
Voc-tech teachers	--	--	--	--	--	--	0.5	0.3	0.3	--	--	--	1,985.4		1,896.8
Voc-tech students:voc-tech teachers	--	--	--	--	--	--	--	--	--	--	--	--	29.1:1		32.2:1
Special education															
Special education teachers	34.1	13.5	0.2	40.2	45.9	32.8	31.4	32.7	32.2	24.7	24.5	25.1	8,635.2		8,287.4
SWDs:SPED teachers	12.0 :1	31.4 :1	--	16.0 :1	14.7 :1	22.6 :1	15.0 :1	14.5 :1	14.3 :1	13.0 :1	14.7 :1	14.6 :1	17.9 :1		18.9 :1
English language learners															
All teachers of ELLs	1.0	--	--	7.6	7.7	6.9	0.8	0.8	2.8	4.9	6.8	8.0	1,367.7		1,421.6
English as second language (ESL)	1.0	--	--	7.6	7.7	6.9	0.8	0.8	2.8	4.9	6.8	8.0	1,253.7		1,387.5
Sheltered content and bilingual	--	--	--	--	--	--	--	--	--	--	--	--	114.0		34.1
ELLs:ELL teachers	12.0 :1	--	--	21.7 :1	23.4 :1	24.1 :1	--	--	23.2 :1	45.7 :1	37.8 :1	35.1 :1	59.3 :1		63.5 :1

* State-wide totals for 2016 staffing could only be imputed because of missing district data. With 2017 data now available, DART doesn't use the 2016 imputed data.



Special Education Staff 2015-2017

all funding sources included FTEs (full-time equivalents) Data Definitions	Sudbury			Winchester			Wayland			Belmont			State		
	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016*	2017
Students with disabilities in-district (SWDs)	409	424	402	644	676	740	471	475	459	322	360	366	154,513		156,764
Special education teachers	34.1	13.5	0.2	40.2	45.9	32.8	31.4	32.7	32.2	24.7	24.5	25.1	8,635.2		8,287.4
SWDs:SPED teachers	12.0: 1	31.4: 1	--	16.0: 1	14.7: 1	22.6: 1	15.0: 1	14.5: 1	14.3: 1	13.0: 1	14.7: 1	14.6: 1	17.9: 1		18.9: 1
SPED paraprofessionals	28.6	27.8	--	86.2	86.2	74.6	67.7	68.8	76.2	70.9	77.6	71.7	17,569.6		17,063.7
SWDs:SPED paras	14.3: 1	15.3: 1	--	7.5: 1	7.8: 1	9.9: 1	7.0: 1	6.9: 1	6.0: 1	4.5: 1	4.6: 1	5.1: 1	8.8: 1		9.2: 1
SPED instructional support	8.8	2.0	1.0	11.5	11.5	12.5	4.7	5.1	5.4	5.1	3.9	4.4	1,324.8		1,339.4
SWDs:SPED support	46:1	212:1	402:1	56:1	59:1	59:1	101:1	93:1	86:1	63:1	92:1	83:1	117:1		117:1
SPED related staff	19.6	18.2	23.6	19.6	19.6	19.6	8.9	9.4	10.6	10.7	10.6	10.7	4,378.9		4,820.9
SWDs:SPED related staff	21:1	23:1	17:1	33:1	34:1	38:1	53:1	50:1	43:1	30:1	34:1	34:1	35:1		33:1

* State-wide totals for 2016 staffing could only be imputed because of missing district data. With 2017 data now available, DART doesn't use the 2016 imputed data.



Sudbury Finance Summary

Per pupil (all funds)	2012	2013	2014	2015	2016	State 2016	2013 +/-	2014 +/-	2015 +/-	2016 +/-
Expenditures per pupil										
In-district	12,114	12,557	13,511	14,168	14,861	15,024	4%	8%	5%	5%
Out-of-district	--	--	--	--	--	--				
All	12,899	13,426	14,246	14,710	15,259	15,545	4%	6%	3%	4%
Pupils (FTEs)										
In-district	3,068.3	3,008.1	2,917.9	2,853.9	2,811.4	905,677.2	-2%	-3%	-2%	-1%
Out-of-district	58.9	46.3	39.8	46.8	39.4	73,250.6	-21%	-14%	18%	-16%
All	3,127.2	3,054.4	2,957.7	2,900.7	2,850.8	978,927.8	-2%	-3%	-2%	-2%
Expenditures by function (all funds)										
Education & operation expenditures										
Administration	1,464,984	1,532,782	1,664,532	1,772,428	2,096,987		5%	9%	6%	18%
Instruction	23,335,360	24,475,992	26,002,857	27,067,555	27,614,171		5%	6%	4%	2%
Pupil services	2,678,363	2,830,478	2,766,564	2,722,062	3,341,849		6%	-2%	-2%	23%
Operations and maintenance	2,742,139	3,042,149	3,316,010	3,180,419	2,926,658		11%	9%	-4%	-8%
Benefits and fixed charges	6,947,990	5,890,806	5,674,799	5,690,887	5,801,933		-15%	-4%	0%	2%
In-district total	37,168,836	37,772,208	39,424,762	40,433,350	41,781,598		2%	4%	3%	3%
Out-of-district	3,169,905	3,235,719	2,711,612	2,235,327	1,718,646		2%	-16%	-18%	-23%
Total education & operation	40,338,740	41,007,927	42,136,374	42,668,677	43,500,244		2%	3%	1%	2%
Other expenditures										
Community activities										
Fixed assets	17,032	58,780	0	30,718	0					
Debt	2,784,905	2,795,571	2,604,911	3,417,014	2,317,355					
Total other expenditures	2,801,937	2,854,351	2,604,911	3,447,732	2,317,355		2%	-9%	32%	-33%
Regional assessments	20,611,058	21,108,296	22,182,734	21,964,688	22,830,566		2%	5%	-1%	4%
TOTAL expenditures **	63,751,735	64,970,574	66,924,019	68,081,097	68,648,165		2%	3%	2%	1%

** Indirect cost transfers not included



Sudbury Finance Summary

Expenditures by funding source	2012	2013	2014	2015	2016	2013 +/-	2014 +/-	2015 +/-	2016 +/-
School committee									
In-district	26,699,725	28,313,117	30,265,531	31,172,508	32,548,525				
Out-of-district tuitions***	1,808,730	1,734,000	1,264,429	1,084,904	967,912				
Other expenditures	17,032	2,976	0	30,718	0				
Total school committee	29,069,286	30,616,048	32,121,171	32,766,546	33,702,282	5%	5%	2%	3%
Municipality									
In-district	6,942,783	5,841,531	5,628,284	5,837,702	6,072,488				
Out-of-district tuitions***	57,350	45,361	23,847	87,899	56,002				
Other expenditures	2,784,905	2,851,375	2,604,911	3,417,014	2,317,355				
Regional assessments	20,611,058	21,108,296	22,182,734	21,964,688	22,830,566				
Total municipality	30,396,096	29,846,563	30,439,776	31,307,303	31,276,411	-2%	2%	3%	0%
Total local appropriations	59,465,382	60,462,611	62,560,947	64,073,849	64,978,693	2%	3%	2%	1%
Local revolving funds	3,026,251	3,361,633	3,266,696	2,927,528	2,519,810	11%	-3%	-10%	-14%
Federal and state grants	1,260,103	1,146,329	1,096,376	1,079,721	1,149,662	-9%	-4%	-2%	6%
TOTAL expenditures**	63,751,735	64,970,574	66,924,019	68,081,097	68,648,165	2%	3%	2%	1%
<i>Actual net school spending (NSS)</i>	<i>34,111,182</i>	<i>34,452,859</i>	<i>35,746,075</i>	<i>36,725,037</i>	<i>37,975,015</i>	<i>1%</i>	<i>4%</i>	<i>3%</i>	<i>3%</i>
<i>NSS minus Chapter 70 aid</i>	<i>29,904,237</i>	<i>30,127,714</i>	<i>31,349,005</i>	<i>32,258,817</i>	<i>33,440,620</i>				

State aid revenues	2012	2013	2014	2015	2016	2013 +/-	2014 +/-	2015 +/-	2016 +/-
Chapter 70 aid	4,206,945	4,325,145	4,397,070	4,466,220	4,534,395	2.8%	1.7%	1.6%	1.5%
Circuitbreaker	802,107	899,387	921,671	737,033	694,682				
Charter reimbursement/facilities	12,171	9,452	8,691	51,304	2,611				
Transportation reimbursement		3,104	6,847						
State aid for school construction	1,681,224	1,737,028	1,681,224	1,681,224	1,605,768				
Total state aid	6,702,447	6,974,116	7,015,502	6,935,781	6,837,456	4%	1%	-1%	-1%

** Indirect cost transfers not included

*** Out of district transportation is included in in-district expenditures; it can't be attributed to out-of-district expenditures by funding source.



Sudbury Finance Summary

Out of district expenditures (all funding sources)	2012	2013	2014	2015	2016	2013 +/-	2014 +/-	2015 +/-	2016 +/-
Tuition agreements	--	11,394	--	--	--				
Choice	3,600	10,000	11,500	23,284	15,112				
Charter - Commonwealth	53,750	23,967	12,347	64,615	40,890				
Charter - Horace Mann	--	--	--	--	--				
Out-of-state	--	--	--	--	--				
Private	1,467,334	1,690,856	1,278,105	1,223,897	1,031,930				
Collaboratives	1,101,422	933,547	818,449	445,115	444,869				
Transportation	543,799	565,955	591,211	478,416	185,845				
Total out-of-district expenditures	3,169,905	3,235,719	2,711,612	2,235,327	1,718,646	2%	-16%	-18%	-23%
Out of district pupils									
<i>Total FTEs out-of-district</i>	<i>58.9</i>	<i>46.3</i>	<i>39.8</i>	<i>46.8</i>	<i>39.4</i>	-21%	-14%	18%	-16%
<i>FTEs choice</i>	<i>0.7</i>	<i>2.0</i>	<i>2.3</i>	<i>3.0</i>	<i>1.5</i>				
<i>FTEs Commonwealth charter</i>	<i>4.6</i>	<i>2.0</i>	<i>2.0</i>	<i>5.0</i>	<i>0.0</i>				
<i>FTEs Horace Mann charter</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>				
<i>% out-of-district choice/charter</i>	<i>9%</i>	<i>9%</i>	<i>11%</i>	<i>17%</i>	<i>4%</i>				
Tuition revenues									
Choosing-in tuition revenues									
Tuition revenue	--	--	--	--	--				
<i>FTE pupils choosing in</i>	--	--	--	--	--				
<i>Average tuition</i>	--	--	--	--	--				
Other tuition revenues	0	0	0	0	0				
State aid for out-of-district costs									
Charter school reimbursements	12,171	9,452	8,691	51,304	2,611				
Circuit-breaker	802,107	899,387	921,671	737,033	694,682				
<i>Also, Chapter 70 aid is based on foundation enrollment (resident students enrolled in or out of district.)</i>									



Sudbury Finance Summary

Attachment10.b: DART Report--Sudbury_act_size (2629 : Budget comparison options)



Sudbury Finance Summary

Chapter 70 aid program details	2012	2013	2014	2015	2016	2017	2013 +/-	2014 +/-	2015 +/-	2016 +/-	2017 +/-
Foundation											
Foundation enrollment	2,950	2,955	2,877	2,766	2,727	2,803	0.2%	-2.6%	-3.9%	-1.4%	2.8%
Foundation budget	24,225,299	25,075,914	24,959,361	24,443,508	24,450,575	25,153,176	3.5%	-0.5%	-2.1%	0.0%	2.9%
Aid											
Chapter 70 aid	4,206,945	4,325,145	4,397,070	4,466,220	4,534,395	4,688,560	2.8%	1.7%	1.6%	1.5%	
Aid percent of foundation budget	17.4%	17.2%	17.6%	18.3%	18.5%	18.6%					
Target aid share percent	17.5%	17.5%	17.5%	17.5%	17.5%	17.5%					
Local contribution and net school spending											
Required local contribution	21,111,921	21,703,788	21,986,344	21,216,573	21,153,252	20,930,012	2.8%	1.3%	-3.5%	-0.3%	-1.1%
Required net school spending	25,318,866	26,028,933	26,383,414	25,682,793	25,687,647	25,618,572	2.8%	1.4%	-2.7%	0.0%	-0.3%
Actual NSS ***	34,111,182	34,452,859	35,746,075	36,725,037	37,975,015	0	1.0%	3.8%	2.7%	3.4%	###
Over/under required NSS	34.7%	32.4%	35.5%	43.0%	47.8%	-100.0%					
Municipal levy capacity****											
Maximum levy limit	\$69.2m	\$71.2m	\$73.4m	\$74.5m	\$77.3m	\$80.0m					
Tax levy	\$69.0m	\$71.0m	\$73.0m	\$73.5m	\$77.0m	\$79.9m	3%	3%	1%	5%	4%
Excess capacity	146,702	188,382	402,908	968,164	320,332	135,210					
Excess as percent of levy limit	0.2%	0.3%	0.5%	1.3%	0.4%	0.2%					
Levy limit w/o debt&capital exclusions	\$64.8m	\$67.0m	\$69.3m	\$72.5m	\$74.2m	\$77.3m					
Levy ceiling	\$96.0m	\$96.6m	\$99.0m	\$102.2m	\$105.8m	\$110.2m	1%	2%	3%	3%	4%
Override capacity	\$31.1m	\$29.6m	\$29.7m	\$29.8m	\$31.6m	\$32.9m					

*** Actual NSS for the current year is the budgeted amount; it will be adjusted from actuals when End of Year Reports are submitted.

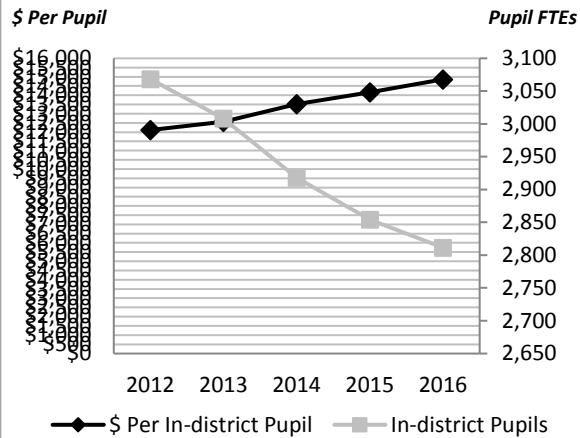
**** This data is available for municipalities but not regional districts. Municipalities may fund more than one district (e.g. regional voc-tech.)

Attachment 10.b: DART Report--Sudbury_act_size (2029 : Budget comparison options)

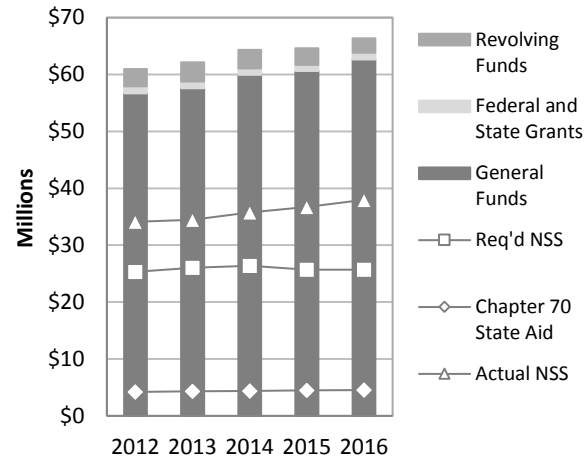


Sudbury Finance Charts

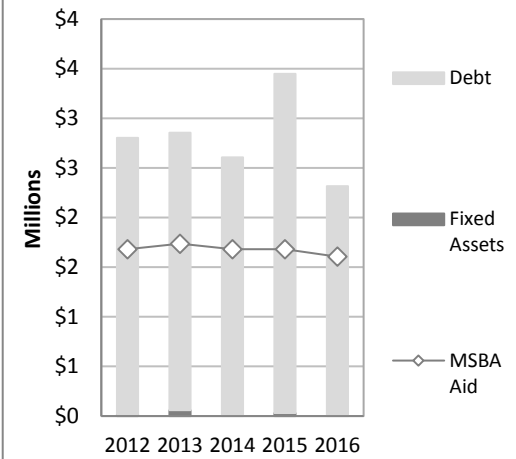
Five Year Trend for \$/In-district Pupil



Expenditure by Source of Funds
(excluding Debt/Capital)



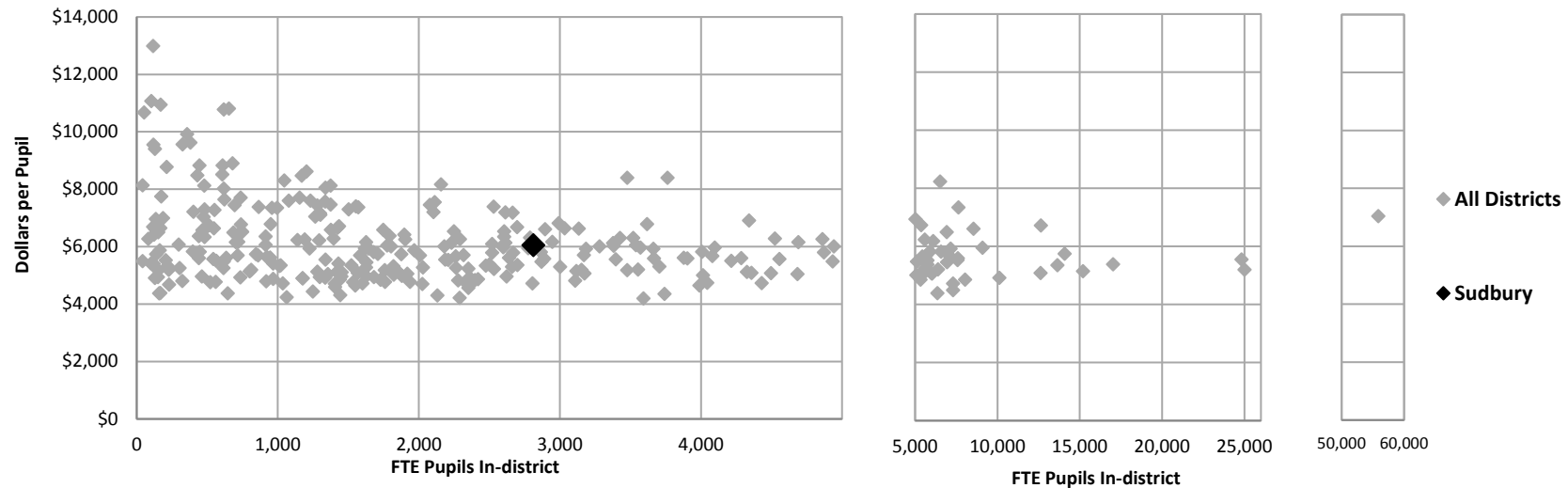
Debt and Capital Expenditures



Per Pupil Expenditures Compared to All Districts

Select 2016 expenditure category:

Teachers





Sudbury

2016 Expenditures by Source of Funding

	General Funds		Total General Funds	Local revolving funds	Federal/ state grants	Total
	School committee	Municipality				
Expenditures for education and operations <i>(expenses in per pupil calculations)</i>						
District administration	1,791,426	305,561	2,096,987	--	--	2,096,987
Other instructional leadership	2,462,927	--	2,462,927	--	108,990	2,571,917
Teachers	16,434,608	--	16,434,608	263,780	323,061	17,021,449
Other teaching services	5,007,689	--	5,007,689	12,990	368,511	5,389,190
Professional development	203,093	--	203,093	--	72,664	275,757
Instructional materials, etc.	690,585	--	690,585	6,660	37,463	734,708
Guidance/counseling/testing	1,566,388	--	1,566,388	--	54,761	1,621,149
Pupil services	1,491,325	76,025	1,567,350	1,619,467	155,032	3,341,849
Operations and maintenance	2,795,832	22,800	2,818,632	108,026	--	2,926,658
Benefits and fixed charges	104,651	5,668,102	5,772,753	--	29,180	5,801,933
Out of district tuitions/transp	1,153,757	56,002	1,209,759	508,887	--	1,718,646
Subtotal	33,702,282	6,128,490	39,830,772	2,519,810	1,149,662	43,500,244
Other district expenditures <i>(not in per pupil calculations)</i>						
Community activities (6000)	--	--	--	--	--	--
Fixed assets (7000)	--	--	--	--	--	--
Debt and BANs (8000 and 5450)	--	2,317,355	2,317,355	--	--	2,317,355
Subtotal	--	2,317,355	2,317,355	--	--	2,317,355
Regional assessments <i>(expended in other districts' education and operations)</i>						
Regional assessments (9500)	22,830,566		22,830,566			22,830,566
Total	33,702,282	31,276,411	64,978,693	2,519,810	1,149,662	68,648,165

State aid included in local appropriations and local revolving funds

	To general fund	To revolving fund	Total
State aid from Dept of Elementary & Secondary Education			
Chapter 70 state aid to education	4,534,395		
Charter school reimbursements	2,611		
Pupil transportation (reg'l districts)	--		
Circuit-breaker		694,682	
Total state aid from DESE	4,537,006	694,682	5,231,688
State aid from Massachusetts School Building Authority	1,605,768		1,605,768



Summary of Per Pupil Expenditure 2014-2016

All funding sources included	Sudbury			Winchester			Wayland			Belmont			State		
	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
FTE Pupils															
<i>In-district residents, choice-in, tuitioned-in</i>	2,918	2,854	2,811	4,426	4,488	4,556	2,688	2,663	2,665	4,190	4,224	4,325	917,204	913,268	905,677
<i>Out-of-district SWD, charter, choice-out, tuitioned-out</i>	40	47	39	69	71	71	41	51	57	82	91	99	65,266	69,736	73,251
<i>All Pupils</i>	2,958	2,901	2,851	4,495	4,559	4,627	2,729	2,714	2,722	4,272	4,316	4,424	982,470	983,004	978,928
Expenditures															
Administration	570	621	746	575	584	625	744	806	826	355	334	373	500	531	550
Instructional Leadership	957	1,037	915	796	866	860	1,035	1,093	1,102	846	842	870	935	976	1,017
Teachers	5,314	5,618	6,054	5,311	5,418	5,574	6,545	6,864	7,182	4,863	4,990	5,119	5,443	5,619	5,832
<i>Student/teacher Ratio</i>	13.8 :1	13.6 :1	13.8 :1	13.7 :1	13.5 :1	13.7 :1	13.5 :1	13.0 :1	12.8 :1	17.1 :1	17.2 :1	16.8 :1	13.6 :1	13.3 :1	13.2 :1
<i>Teacher average salary</i>	73,473	76,991	83,234	73,740	74,033	76,709	88,378	89,900	93,108	82,943	85,241	85,279	73,966	74,782	76,442
Other Teaching Services	1,639	1,747	1,917	922	983	995	1,364	1,461	1,526	909	939	865	1,138	1,177	1,241
Professional Development	171	191	98	142	146	151	211	215	196	129	135	130	217	197	207
Instructional Matl/Equip/Technology	349	390	261	314	328	385	356	375	373	351	338	470	431	431	468
Guidance, Counseling, Testing	481	501	577	443	457	487	540	585	614	297	329	336	421	443	460
Pupil Services	948	954	1,189	834	834	965	1,297	1,512	1,457	764	787	822	1,376	1,430	1,501
Operations and Maintenance	1,136	1,114	1,041	804	810	848	1,326	1,495	1,442	1,214	1,081	1,010	1,102	1,140	1,129
Benefits and fixed charges	1,945	1,994	2,064	1,697	1,684	1,747	2,257	2,487	1,937	1,899	1,914	1,955	2,435	2,491	2,619
Expenditure per in-district pupil	13,511	14,168	14,861	11,836	12,109	12,636	15,676	16,893	16,656	11,627	11,689	11,951	13,998	14,437	15,024
<i>Median per in-district pupil**</i>	13,718	14,168	14,891	12,106	12,789	13,143	12,749	13,342	13,932	12,106	12,789	13,143			
<i>Out of district pupils and expenditures incl in expenditure per pupil</i>															
Expenditure per pupil	14,246	14,710	15,259	12,579	12,801	13,312	16,445	17,652	17,426	12,799	13,029	13,349	14,521	14,942	15,545

**See the Median Per Pupil Expenditure report

Note: because comparable financial data is not available for charter schools, DART state-wide finance and staffing comparisons do not include charter schools.

Attachment 10.b: DART Report--Sudbury_act_size (2629 : Budget comparison options)



Expenditure Per In-district Pupil Detail 2014-2016

All funding sources included	Sudbury			Winchester			Wayland			Belmont			State		
	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
<i>In-district pupils (FTEs)</i>	2,917.9	2,853.9	2,811.4	4,425.5	4,488.2	4,555.9	2,687.9	2,662.7	2,665.2	4,190.3	4,224.4	4,324.9	917,203.5	913,267.8	905,677.2
<i>Expenditures per in-district pupil</i>	13,511	14,168	14,861	11,836	12,109	12,636	15,676	16,893	16,656	11,627	11,689	11,951	13,998	14,437	15,024
Function #	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
In-district expenditures															
Administration	570	621	746	575	584	625	744	806	826	355	334	373	500	531	550
1110 School Committee	< 1	< 1	< 1	--	--	--	9	13	9	4	2	3	25	28	25
1210 Superintendent	110	109	112	72	54	67	114	106	110	76	79	123	84	86	90
1220 Assistant Superintendents	58	54	100	88	81	89	70	70	71	--	--	--	30	32	33
1230 Other District-Wide Administration	--	--	39	--	--	--	96	121	111	2	3	4	32	34	36
1410 Business and Finance	158	163	160	213	222	240	204	207	210	158	171	171	173	180	186
1420 Human Resources	80	82	86	38	38	39	49	63	51	46	47	47	36	42	42
1430 Legal Service for School Committee	34	27	26	18	27	28	29	16	21	67	33	24	22	21	22
1435 Legal Settlements	23	21	--	--	--	--	--	--	--	--	--	--	4	6	6
1450 District-wide Information Systems	106	165	222	147	161	163	173	210	243	1	< 1	--	94	103	109
Instructional Leadership	957	1,037	915	796	866	860	1,035	1,093	1,102	846	842	870	935	976	1,017
2110 Curriculum Directors (Supervisory)	230	234	276	64	71	70	231	246	247	241	241	258	195	210	215
2120 Dept Heads (Non-Supervisory)	--	--	22	102	132	128	25	25	26	--	--	--	23	25	27
2210 School Leadership	545	559	617	462	480	479	543	578	580	469	457	470	532	557	583
2220 Curriculum Leaders (School Level)	82	108	--	--	--	--	99	98	103	--	--	--	81	80	86
2250 Admin. Technology (School Level)	--	--	--	58	67	68	--	--	--	137	143	142	42	43	44
2315 Instructional Coordinators	100	137	--	109	115	114	138	145	146	--	--	--	62	62	62
Teachers	5,314	5,618	6,054	5,311	5,418	5,574	6,545	6,864	7,182	4,863	4,990	5,119	5,443	5,619	5,832
2305 Teachers, Classroom	4,205	4,471	4,835	4,812	4,921	5,087	5,485	5,594	5,834	3,770	3,861	3,945	4,835	5,011	5,196
2310 Teachers, Specialists	1,109	1,147	1,220	498	497	486	1,060	1,270	1,349	1,093	1,129	1,174	608	608	637

Attachment 10.b: DART Report--Sudbury_act_size (2629 : Budget comparison options)



Expenditure Per In-district Pupil Detail 2014-2016

All funding sources included	Sudbury			Winchester			Wayland			Belmont			State		
	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Other Teaching Services	1,639	1,747	1,917	922	983	995	1,364	1,461	1,526	909	939	865	1,138	1,177	1,241
2320 Medical/ Therapeutic Services	590	563	721	311	339	332	305	342	363	239	275	204	257	269	286
2325 Substitute Teachers	105	107	147	67	67	63	121	114	115	75	95	86	133	134	137
2330 Paraprofessionals	801	930	897	450	474	490	789	853	887	536	514	517	672	694	737
2340 Librarians/Media Center Directors	143	147	153	94	103	110	149	152	162	59	55	58	77	80	81
Professional Development	171	191	98	142	146	151	211	215	196	129	135	130	217	197	207
2351 Professional Development Leaders	< 1	--	--	19	17	19	29	31	31	49	54	53	15	17	19
2353 Professional Days	67	72	--	88	88	93	71	74	77	28	28	29	72	75	79
2355 Substitutes for Prof. Development	8	5	6	--	--	--	--	--	--	--	--	--	5	4	4
2357 Professional Development Costs	96	114	92	34	41	38	111	110	88	52	53	47	125	102	105
Instructional Materials/Equip/Tech	349	390	261	314	328	385	356	375	373	351	338	470	431	431	468
2410 Textbooks, Software/Media/Matls	102	9	25	69	43	35	69	50	55	13	22	21	70	67	72
2415 Instructional Matls (Libraries)	24	22	26	179	185	216	22	31	21	69	68	93	59	55	58
2420 Instructional Equipment	24	33	35	5	12	7	66	97	87	6	3	7	33	34	43
2430 General Classroom Supplies	102	175	128	10	11	10	91	108	113	42	41	52	69	67	75
2440 Other Instructional Services	--	--	--	31	25	30	32	43	53	130	110	143	118	126	136
2451 Classroom Technology	98	151	48	20	52	87	55	23	17	77	71	118	60	56	55
2453 Technology (Libraries)	--	--	--	--	--	--	--	--	--	6	14	27	11	15	14
2455 Instructional Software	--	--	--	--	--	--	22	24	26	8	8	11	11	12	16
Guidance, Counseling, Testing	481	501	577	443	457	487	540	585	614	297	329	336	421	443	460
2710 Guidance/Adjustment Counselors	228	246	264	247	273	275	251	263	254	173	208	205	289	302	303
2720 Testing and Assessment	3	3	1	6	6	5	17	21	24	8	5	8	16	18	25
2800 Psychological Services	250	252	311	190	179	207	273	301	336	115	117	123	116	123	132
Pupil Services	948	954	1,189	834	834	965	1,297	1,512	1,457	764	787	822	1,376	1,430	1,501
3100 Attendance and Parent Liaisons	--	--	--	4	5	4	--	--	< 1	--	--	--	22	21	20
3200 Medical/Health Services	116	122	127	129	120	125	112	127	127	135	144	153	157	164	172
3300 Transportation Services	474	454	593	152	164	230	405	462	452	183	176	184	549	574	597
3400 Food Services	254	251	277	295	276	290	331	483	430	216	209	231	383	394	409
3510 Athletics	33	< 1	25	219	232	283	345	318	327	176	177	183	154	156	168
3520 Other Student Activities	71	102	139	29	32	29	99	117	116	38	40	30	76	82	95
3600 School Security	< 1	26	27	6	6	4	5	5	5	17	41	42	35	38	39

Attachment 10.b: DART Report--Sudbury_act_size (2629 : Budget comparison options)



Expenditure Per In-district Pupil Detail 2014-2016

All funding sources included	Sudbury			Winchester			Wayland			Belmont			State		
	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Operations and Maintenance	1,136	1,114	1,041	804	810	848	1,326	1,495	1,442	1,214	1,081	1,010	1,102	1,140	1,129
4110 Custodial Services	356	341	415	253	272	274	431	456	488	252	240	257	381	399	406
4120 Heating of Buildings	86	88	56	150	154	119	120	146	100	169	66	50	124	117	87
4130 Utility Services	230	196	200	211	203	258	349	413	375	223	284	282	227	230	228
4210 Maintenance of Grounds	3	3	3	--	--	--	101	124	109	98	72	79	55	68	60
4220 Maintenance of Buildings	271	206	179	181	170	187	161	170	190	378	344	296	220	230	247
4225 Building Security System	--	--	--	--	--	--	--	--	--	16	1	< 1	4	5	4
4230 Maintenance of Equipment	174	280	167	10	10	9	< 1	3	4	29	18	21	29	26	26
4300 Extraordinary Maintenance	--	--	--	--	--	--	10	13	9	19	--	2	26	23	25
4400 Networking/Telecommunications	8	< 1	22	--	--	--	64	64	63	17	27	14	21	24	27
4450 Technology Maintenance	8	< 1	--	--	--	--	91	105	104	12	29	10	16	18	19
Benefits and fixed charges	1,945	1,994	2,064	1,697	1,684	1,747	2,257	2,487	1,937	1,899	1,914	1,955	2,435	2,491	2,619
5100 Employer Retirement Contributions	489	535	579	258	261	266	535	396	433	411	452	495	393	410	433
5150 Employee Separation Costs	--	15	--	--	--	21	7	4	67	5	2	10	38	37	44
5200 Insurance for Active Employees	1,166	1,145	1,199	1,128	1,113	1,111	1,244	1,597	1,035	971	977	985	1,457	1,482	1,548
5250 Insurance for Retired Employees	199	204	215	231	203	231	346	360	254	362	343	330	440	446	471
5260 Other Non-Employee Insurance	55	58	48	29	60	62	110	110	124	119	108	104	56	63	66
5300 Rental Lease of Equipment	21	22	22	--	--	--	--	--	--	--	--	--	7	8	10
5350 Rental Lease of Buildings	--	--	--	--	--	--	--	--	--	--	--	--	6	7	8
5400 Short Term Interest RANs	--	--	--	--	--	--	--	--	--	--	--	--	< 1	< 1	< 1
5500 Other Fixed/Crossing Guards	--	--	--	--	--	--	--	--	--	--	--	--	23	21	23
5550 School Crossing Guards	14	16	--	51	47	56	14	20	24	31	32	32	14	16	16
Expenditure/in-district pupil	13,511	14,168	14,861	11,836	12,109	12,636	15,676	16,893	16,656	11,627	11,689	11,951	13,998	14,437	15,024

Attachment 10.b: DART Report--Sudbury_act_size (2029 : Budget comparison options)



Median Expenditure Per In-district Pupil
by District Type and Size
(all sources of funding)

Districts		2014				2015				2016			
Type	Size	#	Median	Min	Max	#	Median	Min	Max	#	Median	Min	Max
K-12	< 1,000	15	14,890	11,713	39,260	15	15,398	11,296	38,781	16	17,551	12,908	39,505
	1,000-1,999	50	12,545	10,093	19,434	51	13,140	10,954	20,200	50	13,565	11,326	20,858
	2,000-2,999	46	12,749	9,352	20,826	47	13,342	9,452	21,826	47	13,932	9,971	22,870
	3,000-3,999	33	12,721	10,109	17,042	30	13,144	10,715	17,651	32	13,919	11,013	19,137
	4,000-4,999	19	12,106	10,487	16,779	19	12,789	10,764	17,572	19	13,143	11,201	17,947
	5,000-7,999	34	12,676	10,679	25,627	35	12,947	10,896	26,184	32	13,280	11,222	26,584
	8,000-26,000	11	13,545	12,632	16,659	11	13,881	12,961	17,156	12	14,335	12,334	17,872
	55,000	1	19,179			1	19,225			1	20,312		
Elementary	< 500	44	16,684	11,075	28,643	45	16,896	10,986	32,175	46	17,639	11,567	34,926
	500-999	14	12,950	9,663	17,520	13	13,724	9,629	17,402	12	13,587	10,381	19,054
	1,000 +	9	13,718	8,910	19,824	9	14,168	9,614	20,719	9	14,891	10,213	21,356
Secondary	< 1,000	6	15,813	12,689	25,195	6	16,680	13,150	27,436	6	16,903	13,670	29,396
	1,000 +	11	13,977	11,787	19,418	11	15,030	12,376	19,767	11	15,561	12,583	20,285
Vocational/ Agricultural	< 1,000	16	22,159	16,263	25,859	14	21,898	17,111	28,227	14	22,575	18,395	32,362
	1,000 +	14	18,303	16,832	21,403	15	18,682	17,568	22,260	15	19,627	18,216	22,567
State			13,998				14,437				15,024		

Attachment 10.b: DART Report--Sudbury_act_size (2629 : Budget comparison options)



Out of District Expenditures 2014 - 2016

Out-of-district expenditures	Sudbury			Winchester			Wayland			Belmont		
	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Tuition agreements to other MA districts ¹	--	--	--	--	36,970	37,480	336,141	443,697	213,222	693,639	56,794	21,344
School choice tuition	11,500	23,284	15,112	20,100	20,100	28,183	18,732	5,000	82,023	--	700	8,920
Tuition to Commonwealth charter schools	12,347	64,615	40,890	--	51,277	58,593	13,652	--	16,495	44,087	30,218	32,932
Tuition to Horace Mann charter schools	--	--	--	--	--	--	--	--	--	--	--	--
Tuition to out-of-state schools	--	--	--	415,817	216,867	295,635	60,419	76,555	107,482	101,400	249,883	426,230
Tuition to non-public schools	1,278,105	1,223,897	1,031,930	2,362,182	2,330,427	2,284,637	1,664,941	1,644,672	1,737,565	2,664,134	2,833,290	2,670,610
Tuition to collaboratives	818,449	445,115	444,869	774,540	929,195	808,025	203,381	265,386	445,179	1,768,433	2,861,440	3,352,958
Out-of-district transportation	591,211	478,416	185,845	584,079	427,778	516,960	449,155	487,746	444,853	684,032	816,034	858,034
Total	2,711,612	2,235,327	1,718,646	4,156,718	4,012,614	4,029,513	2,746,421	2,923,056	3,046,819	5,955,724	6,848,359	7,371,027
<i>FTE out-of-district pupils</i>	<i>39.8</i>	<i>46.8</i>	<i>39.4</i>	<i>69.1</i>	<i>71.1</i>	<i>71.1</i>	<i>41.2</i>	<i>51.0</i>	<i>57.0</i>	<i>81.5</i>	<i>91.4</i>	<i>99.3</i>
Choice and charter tuition details												
School choice program												
<i>FTE pupils</i>	2.3	3.0	1.5	3.0	3.0	3.8	2.8	1.0	4.0	0.0	0.1	1.3
Average choice tuition ²	5,000	7,813	10,075	6,700	6,700	7,417	6,714	5,000	20,765	--	5,000	6,862
Commonwealth charter schools												
<i>FTE pupils</i>	2.0	5.0	0.0	0.0	4.1	0.0	1.0	0.0	0.0	4.7	2.0	0.0
Average Commonwealth charter tuition ²	6,174	12,923	--	--	12,659	--	13,652	--	--	9,325	15,109	--
Horace Mann charter schools												
<i>FTE pupils</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average Horace Mann charter tuition ²	--	--	--	--	--	--	--	--	--	--	--	--
% out-of-district FTEs in choice/charter	11%	17%	4%	4%	10%	5%	9%	2%	7%	6%	2%	1%
Tuition revenues												
Choosing in tuition revenues												
<i>FTE pupils</i>	--	--	--	--	--	--	--	--	--	--	--	--
Tuition revenue	--	--	--	--	--	--	--	--	--	--	--	--
Average tuition	--	--	--	--	--	--	--	--	--	--	--	--
Other tuition revenues³	0	0	0	0	0	0	0	0	0	0	0	0
State aid supporting out-of-district												
Charter school reimbursements	8,691	51,304	2,611	--	49,470	10,111	2,109	--	14,734	23,056	1,786	4,194
Circuit-breaker	921,671	737,033	694,682	1,058,044	1,030,567	979,256	500,795	603,038	658,820	1,276,808	1,377,754	1,451,678
Chapter 70 aid is based on resident students enrolled in or out of district.												

1. Tuition agreements for grades not offered in local district; for voc-tech choices not locally available; SPED program in another district; collaboratives of which the district is not a member

2. See tuition totals above.

3. Kindergarten tuitions; tuition agreements with other districts to provide certain grades, voc-tech or SPED programs for non-resident students



Revenues 2014-2016
(not including local tax levy funds)

	Sudbury			Winchester			Wayland			Belmont		
	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
General Fund	147,555	45,460	13,601	289,057	217,023	223,634	86,371	124,017	263,573	1,200	44,995	11,545
Assessments Rec'd by Regional Schools	0	0	0	0	0	0	0	0	0	0	0	0
E&D Fund Appropriation (Reg'l Only)	0	0	0	0	0	0	0	0	0	0	0	0
Tuition from Individuals	0	0	0	0	0	0	0	0	0	0	0	0
Tuition from Other MA Districts	0	0	0	0	0	0	0	0	0	0	0	0
Tuition from Other States	0	0	0	0	0	0	0	0	0	0	0	0
Carry Forward	123,297	29,756	0	0	0	0	10,696	46,076	154,592	1,200	44,995	11,545
Transportation Fees	0	0	0	0	0	0	0	0	0	0	0	0
Earnings on Investments	0	0	0	0	0	0	0	0	0	0	0	0
Rental of School Facilities	0	0	0	0	0	0	0	0	0	0	0	0
Other Revenue	0	0	0	0	0	0	21,438	20,500	25,887	0	0	0
Medical Care and Assistance	24,258	15,704	13,601	289,057	217,023	223,634	54,237	57,442	83,094	0	0	0
Non-Revenue Receipts	0	0	0	0	0	0	0	0	0	0	0	0
State Aid	7,015,502	6,935,781	6,837,456	11,049,366	20,657,946	30,256,574	5,697,760	4,252,338	4,428,048	7,724,622	8,204,240	9,272,819
Chapter 70 School Aid	4,397,070	4,466,220	4,534,395	7,464,498	7,572,048	7,680,548	3,316,668	3,644,813	3,710,313	5,864,908	6,420,104	6,766,099
Charter School Reimbursements	7,808	46,874	-41	0	45,854	6,097	1,226	0	13,850	19,727	0	2,408
Charter School Facilities Aid	883	4,430	2,652	0	3,616	4,014	883	0	884	3,329	1,786	1,786
Pupil Transportation - Chapter 71, 74	6,847	0	0	20,138	8,415	19,107	11,434	4,487	3,117	4,830	22,098	14,354
Foundation Reserve	0	0	0	0	0	0	0	0	0	0	0	0
MSBA Annual Contract Revenues	1,681,224	1,681,224	1,605,768	672,082	672,082	672,082	43,266	0	0	382,498	382,498	0
MSBA One-time Revenues	0	0	0	1,834,604	11,325,364	20,895,470	1,823,488	0	41,064	172,522	0	1,036,494
Circuit Breaker	921,671	737,033	694,682	1,058,044	1,030,567	979,256	500,795	603,038	658,820	1,276,808	1,377,754	1,451,678
Federal Grants	669,401	705,914	711,153	1,033,154	1,094,914	1,075,011	720,344	763,457	773,592	1,176,984	1,219,699	1,349,666
Federal Grants - DOE	647,435	685,097	688,705	1,014,910	1,075,638	1,055,735	636,642	751,326	633,958	1,152,019	1,193,630	1,323,581
Federal Grants - Other	21,966	20,817	22,448	18,244	19,276	19,276	83,702	12,131	139,634	24,965	26,069	26,085
State Grants	411,849	395,269	436,692	10,500	9,000	3,000	662,761	630,911	722,867	717,754	629,711	689,701
State Grants - DOE	411,849	395,269	436,692	7,500	1,000	0	662,761	625,911	722,867	717,754	629,711	689,701
State Grants - Other	0	0	0	3,000	8,000	3,000	0	5,000	0	0	0	0
Revolving Funds	2,268,634	2,391,199	1,977,250	3,533,922	4,049,784	3,848,729	4,778,328	5,179,910	5,428,637	3,218,442	3,327,086	3,862,841
School Lunch Receipts	729,442	772,179	750,898	1,322,532	1,344,139	1,422,916	1,013,473	1,127,092	1,279,253	902,774	955,027	1,144,664
Athletic Receipts	0	0	0	674,722	770,407	547,699	330,715	345,027	336,117	460,078	471,062	475,063
Tuition Receipts - School Choice	0	0	0	0	0	0	0	0	0	0	0	0
Tuition Receipts - Other	776,839	829,127	111,314	494,627	555,472	554,462	0	0	0	1,057,281	1,046,807	1,365,687
Other Local Receipts	606,715	654,681	985,572	811,045	821,194	921,515	3,058,520	3,398,194	3,553,126	695,787	749,526	779,575
Private Grants	155,638	135,212	129,466	230,996	558,572	402,137	375,620	309,596	260,141	102,522	104,664	97,852
Total Revenues	10,512,941	10,473,623	9,976,152	15,915,999	26,028,667	35,406,948	11,945,564	10,950,633	11,616,717	12,839,002	13,425,731	15,186,572

Attachment 10.b: DART Report--Sudbury_act_size (2629 : Budget comparison options)



Revolving Funds 2014 - 2016

		Sudbury			Winchester			Wayland			Belmont		
		2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
EOY line	Revenues from:												
180	Circuit-breaker	921,671	737,033	694,682	1,058,044	1,030,567	979,256	500,795	603,038	658,820	1,276,808	1,377,754	1,451,678
610	School lunch	729,442	772,179	750,898	1,322,532	1,344,139	1,422,916	1,013,473	1,127,092	1,279,253	902,774	955,027	1,144,664
620	Athletics	--	--	--	674,722	770,407	547,699	330,715	345,027	336,117	460,078	471,062	475,063
630	Tuitions - choice ¹	--	--	--	--	--	--	--	--	--	--	--	--
640	Tuitions - other	776,839	829,127	111,314	494,627	555,472	554,462	--	--	--	1,057,281	1,046,807	1,365,687
650	Other local receipts ²	606,715	654,681	985,572	811,045	821,194	921,515	3,058,520	3,398,194	3,553,126	695,787	749,526	779,575
660	Private grants	155,638	135,212	129,466	230,996	558,572	402,137	375,620	309,596	260,141	102,522	104,664	97,852
	Total revenues	3,190,305	3,128,232	2,671,932	4,591,966	5,080,351	4,827,985	5,279,123	5,782,948	6,087,457	4,495,250	4,704,840	5,314,519
EOY col.	Expenditures from:												
6	Circuit-breaker	832,125	584,108	508,887	1,208,242	918,957	997,902	493,993	592,240	642,240	1,345,743	1,367,206	1,172,272
10	School lunch	742,110	714,980	779,756	1,304,967	1,239,239	1,319,608	890,132	1,287,269	1,146,735	905,181	883,047	997,859
9	Athletics	175,476	--	71,594	698,326	747,127	907,586	339,714	358,268	332,484	486,939	471,976	476,457
8	Tuitions received	820,604	846,824	115,027	530,905	560,673	566,740	--	--	--	1,449,867	1,094,611	857,016
11	Other local receipts	552,395	667,422	931,856	859,433	835,517	876,099	3,047,739	3,629,610	3,502,985	870,409	512,438	509,844
7	Private grants	143,987	114,194	112,690	180,293	360,288	514,269	364,287	336,202	202,390	103,386	131,771	96,403
	Total expenditures	3,266,696	2,927,528	2,519,810	4,782,165	4,661,800	5,182,205	5,135,865	6,203,589	5,826,834	5,161,524	4,461,049	4,109,851
	Net³ (revenues less expenditures)	-76,392	200,704	152,122	-190,199	418,551	-354,220	143,259	-420,641	260,623	-666,274	243,791	1,204,668

Attachment 10.b: DART Report--Sudbury_act_size (2629 : Budget comparison options)

1. Choice tuitions must be deposited in this revolving fund and are expected to be spent on in-district instruction. Other tuitions (such as kindergarten or PK) may be deposited in the "Tuitions - other" revolving account or counted as general funds revenue.

2. Other local receipts include facility rentals, culinary arts programs, lost book fees, insurance damage payments, etc.

The following tables show how EPIMS codes are categorized in staffing, teaching areas, and teaching subjects in DART staffing reports. A complete description of EPIMS codes is on the ESE website in Appendix A-G of the Data Handbook:

<http://www.doe.mass.edu/infoservices/data/epims/>

Staff Categories - EPIMS Job Code	Code
District Administrators	
Superintendent	1200
Asst/Assoc/Vice Superintendent	1201
School Business Official	1202
Other District Administrator	1205
Supervisor/Director: Technology	1224
School Nurse Leader	1226
Other Instructional Leaders	
Supervisor/Director of Guidance	1210
Supervisor/Director of Pupil Personnel	1211
Special Education Administrator	1212
Supervisor/Director: Arts	1213
Supervisor/Director of Assessment	1214
Supervisor/Director: Curriculum	1215
Supervisor/Director: English Language Learner	1216
Supervisor/Director: English	1217
Supervisor/Director: Foreign Language	1218
Supervisor/Director: History/Social Studies	1219
Supervisor/Director: Library/Media	1220
Supervisor/Director: Mathematics	1221
Supervisor/Director: Reading	1222
Supervisor/Director: Science	1223
Supervisor/Director: Professional Development	1225
School Administrators	
Principal	1305
Asst/Vice Principal	1310
Other School Administrator	1320
Instructional Coaches	2330
Teachers	
Teacher	2305
Teacher - support content instruction	2310
Substitutes (Long-term)	2325
Paraprofessionals	4100
Tutors	3323

Teaching Areas - EPIMS Assignment Code	Code
General education	
Not available	000
Core Subject: Non-Secondary Level Classroom Teacher	001
Core Subject: Secondary Level Classroom Teacher	002
Core Support Content General Education	012
Core Subject: Reading Teacher	017
Non-Core Subject: Non-Secondary Level Classroom Teacher	212
Non-Core Subject: Secondary Level Classroom Teacher	213

Staff Categories (continued)	Code
Instructional Support	
Educational Interpreter	3324
Diagnostic and Evaluation Staff	3325
Recreation Specialist	3326
Rehabilitation Counselor	3327
Work Study Coordinator	3328
Guidance Counselor	3329
Librarian	3330
Junior ROTC	3340
School Adjustment Counselor - Non-SWD	3350
School Psychologist - Non-SWD	3360
School Social Worker - Non-SWD	3370
Other Professional Support (DSSR)	3380
Special Education Instructional Support	
School Adjustment Counselor - SWD	3351
School Psychologist - SWD	3361
School Social Worker - SWD	3371
Special Education Related Staff	
Audiologist	3410
Occupational Therapist	3420
Physical Therapist	3430
Peripatologist	3440
Speech Pathologist	3450
Other Related Special Education Staff	3460
Medical/Health Services	
Physician	5010
Psychiatrist	5011
School Nurse - Non-Special Education	5020
School Nurse - Special Education	5021
Clerical	
Administrative Aides	6100
Administrative Clerks/Secretaries	6110
Special Education Administrative Aides	6120
Special Education Clerks/Secretaries	6130
Other Administrative Support	6150
Tech Support	
Information Services and Technical Support	6140

Teaching Subjects - EPIMS Course Code	Code
ELA/Reading/Math/Science/Social Studies	
English	01
Mathematics	02
Science	03
History, Social Studies, Social Sciences	04
Reading	74
All Subjects	99
Arts/Languages	

Attachment 10.b: DART Report--Sudbury_act_size (2629 : Budget comparison options)

Non-Core Support Content General Education	215	Arts	05
Vocational-technical		Foreign Languages	06
Non-Core Subject: Career and Technical Education	208	Other	
Special Education		Not Available	00
Core Subject: Mild/Moderate Disabilities Sole Content	003	Religion	07
Core Subject: Severe Disabilities Sole Content	004	Physical, Health and Safety Education	08
Core Subject: Mild/Moderate Disabilities Consultative	005	Military Science	09
Core Subject: Severe Disabilities Consultative	006	Computer and Information Sciences	10
Core Subject: Vision Impairments	007	Communications and A/V Technology	11
Core Subject: Deaf/Hard of Hearing	008	Business and Marketing	12
Non-Core Subject: Vision Impairments	209	Manufacturing	13
Non-Core Subject: Speech/Language/Hearing Disorder	210	Health Care Sciences	14
Non-Core Subject: Deaf/Hard of Hearing	211	Public, Protective and Government Service	15
Non-Core Subject: Other Special Education Instruction	214	Hospitality and Tourism	16
Special Ed: Shared Physical Education at Non-Secondary	301	Architecture and Construction	17
Special Ed: Shared Physical Education at Secondary	302	Agriculture, Food and Natural Resources	18
Special Ed: Shared Vocational Education	303	Human Services	19
Special Ed: Other Shared Instructional Staff	304	Transport, Distribution and Logistics	20
English as a second language*		Engineering and Technology	21
Core Subject: Non-Secondary Level ESL Teacher	010	Miscellaneous	22
Core Subject: Secondary Level ESL Teacher	011	SPED Services	24
Non-Secondary Content Support ESL Teacher	014	CVTE (Chapter 74) courses	CIP
Secondary Content Support ESL Teacher	020		
Other teachers of English language learners*			
Core Subject: Sheltered Content Teacher > or = 50%	009		
Core Subject: Other Bilingual Education	016		
Core Subject: Sheltered Content Teacher < 50%	019		

* These two categories are combined as 'Teachers of English language learners (ELLs)'.

Definitions and further explanations of financial data are available on the School Finance and District Support pages of the Department's website:

<http://www.doe.mass.edu/finance/>

Chapter 70	State aid to public school districts based on community wealth and resident students
Charter school reimbursements	State aid to mitigate loss of funds to local charter districts
Circuit-breaker	State aid from the Special Education Reimbursement Fund to cap local spending on individual special needs students
Community activities	Includes costs of citizen meetings, PTO activities, school councils, public forums and lectures, advisory council meetings
Debt and BANs	Payments for debt service or Bond Anticipation Notes
Federal/state grants	All grants from federal or state agencies (some administered through the Department of Elementary and Secondary Education)
Fixed assets	Includes purchase of land and buildings, equipment, capital technology, and motor vehicles; payments on loan principal, lease/purchase agreements, local school construction projects, and payments from aid provided by the MA School Building Authority
FTE pupils	Full-time equivalent pupils; calculated from the SIMS (End of Year)total of students' days in membership (enrollment) divided by 180 days
Functions	Finance codes for functional categories, e.g. instructional equipment, assistant superintendents, psychological services, food services
In-district pupils	Pupils enrolled in a district and receiving educational services there (includes students who enroll through the choice program, tuition agreements, etc.)
In-district expenditures	Costs included in per pupil calculations: administration, instruction and student support, pupil services, operations, benefits and fixed charges
Local appropriations	Local general funds committed to the annual budget (includes state aid but not state grants)
Local receipts and private grants	All other receipts from local programs including culinary arts programs, lost books fees, supplies fees, insurance damages reimbursements, rental of school facilities, etc.
MA School Building Authority	State agency that provides aid for construction projects, using criteria to prioritize which communities and projects receive aid
Median per pupil expenditure	Medians (the middle of a group of numbers) instead of averages reduce the impact of high outliers and are sometimes more useful benchmarks
Other district expenditures	Expenditures not included in per pupil calculations: indirect cost transfers, cCommunity activities, fixed assets, debt and BANs
Out-of-district pupils	Resident students for whom a district is financially responsible, but who are enrolled in other districts or programs such as charter schools, school choice, SPED out-placements, tuition agreements with other districts
Out-of-district transportation	Some out of district pupils are eligible for transportation, such as SWD students
Pupil transportation	Transportation is reported in Schedule 1 of the EOYR as one number; some of this total is assigned to out-of-district transportation costs based on Schedule 7.

Regional assessments	Payments by municipalities to regional districts including vocational-technical districts, and regional secondary or elementary districts (these are not included under municipalities' expenditures because they are reported as expenditures by the regional district; a separate report is needed on the expenditure by municipalities in order to fully understand the cost of education for local taxpayers)
Revenues	Revenues reported in Schedule 1 of the EOYR; does not include local tax levy appropriations. Expenditures are also reported in terms of revenue sources, but there is not always a direct correlation of revenues and expenditures. Local revolving funds do not have to be spent in the year received, for example. Local appropriations are reported as school committee and municipal expenditures without differentiating state aid, tax levies and any other revenues that go directly to general funds.
Revolving funds	Revolving funds are local accounts for fees and payments received by the district such as lunch or athletic fees; unlike appropriations, revolving fund revenues do not have to be expended in the year they are received.
School choice tuitions	A revolving fund specifically for school choice tuitions; by law these receipts must be deposited in a revolving fund and spent on educational expenses in the district.
SFSF (State Fiscal Stabilization Fund)	The State Fiscal Stabilization Fund was created with American Recovery and Reinvestment Act (ARRA) funds in FY09; SFSF funds were used by the state in FY09 in lieu of some Chapter 70 payments. Expenditures of these funds were reported as federal grant expenditures instead of as local appropriations, which changed Chapter 70 aid totals and Net School Spending (federal grants do not count toward Net School Spending.) Districts used these funds for expenses that would have been covered by local appropriations if Chapter 70 aid had been paid in full.
SPED out-placements	Some special education needs cannot be met in a district's own educational program, particularly if the district is small. These students have a right to publicly-supported education, and the district is responsible for their tuition at another districts, a collaborative, a non-public special education school or an out-of-state school. These students take the MCAS and their performance is included in the district's performance ratings.
State aid	State aid such as Chapter 70, charter school reimbursements, and regional transportation is paid by various state budget line items through the "cherry sheet" to local general funds, then appropriated to the school budget by the school committee and municipality
State-wide average per pupil expenditure	For each category, all costs are totaled and then divided by the total of in-district, out-of-district and all full-time equivalent pupils
Tuition to collaboratives	Collaboratives are organizations enabled by state law and formed by several school committees to provide specific services to all member districts, such as special education program for low-incidence needs, vocational education, professional development, and so on. Each collaborative is unique.
Tuition to Commonwealth charter schools	Commonwealth charter schools receive their charter directly from the state and are managed by a board. When a student enrolls at a charter school, the state transfers funds from the district to the charter school.
Tuition to Horace Mann charter schools	Horace Mann charter schools receive their charter from a local school committee, which negotiates the amount of tuition.
Tuition to non-public schools	Non-public schools are state-approved special education programs.

Tuitions received	Revenue from tuitions may be reported as general fund revenues for tuition agreements (regular contracts for grades or programs not provided by a student's local district) or pre-school and full-day kindergarten. Choice tuitions are not included in this general funds revenue line; they are deposited in a revolving fund used to support educational program expenses.
Tuitions agreements with other municipal/regional districts	Some districts do not provide certain grades or vocational programs and contract with a nearby district to provide the education for which they are responsible. Tuition agreements do not confer governance rights as membership in a regional district would.



Resource Allocation and District Action Reports (RADAR)

Getting Started with RADAR

The **Resource Allocation and District Action Reports (RADAR)** project is a multi-year effort launched in 2015 to produce a series of reports on how districts use their resources of money, staff and time. The reports present data visually, and typically provide comparisons to ten districts for consideration. The Department invites district leaders and community members to explore how they can use these reports in planning and budgeting discussions.

Eight districts piloted RADAR in school year 2016-2017, and found the reports helped them fund new initiatives in their districts through reallocations, including:

- Expanding efforts to strengthen teacher practice through instructional coaching
- Managing class sizes to expand student course-taking options
- Improving special education programming and student support

Explore RADAR - Benchmarking Reports

1. Click on the Home tab, select your district, and select ten comparison districts
2. Open each tab to see the reports

A place to start a data discussion if you choose:

- use the questions at the top of each report
- go through the charts and questions in "Change5Yrs_guidingquestions"

Resources in this file:

Summary of Benchmarking Reports (below)

Worksheets:

More About Data

Acronyms and Resources

Staff Definitions

Common Features in the Reports

- Blue-shaded cells usually contain drop down lists that allow users to select from a list
- Selected districts are usually highlighted in orange in data tables or appear as an orange bar or dot in graphs
- Cells with a red triangle in the upper right-hand corner include comments with additional information about the data that can be displayed by hovering over the cell

Check Data Questions With District Staff

State data about enrollment, staffing and finance comes from districts. Converting local data to state codes can be difficult. Data used in state reports may then seem to be inconsistent with local data, whether coding for the state was in error or simply inconsistent with other districts. Data that has been available on the public website for years can jump out in a new way in visual comparisons with ten districts. If data is surprising, check with your district office before drawing conclusions, to see if there has been a misunderstanding. The Department can't change state data, but local data can be used to clarify state data. For future data collections, Department staff is available to consult about coding.

Contact the RADAR team with questions, comments and suggestions:

radar@doe.mass.edu



Resource Allocation and District Action Reports (RADAR)

10.c

Summary of Benchmarking Reports

Report	Description	Key Questions to Explore
Home	<p>User selects a target district and up to 10 other districts to compare.</p> <p>When you select a target district, the second and third tables on the page populate with lists of districts similar in size and demographics, and similar in size and wealth (property value and income) respectively. While you may consider districts in these lists, you can select any ten districts for which you want comparisons in the top box on the page.</p>	<ul style="list-style-type: none"> • Which districts will be good comparisons? • Are there similar districts by demographics or fiscal capacity that we should consider? • How are our selected districts similar and different from our district? • How does student performance compare across the districts?
Change Over 5 Years (tab - Change5Yrs)	<p>On one page, you can see five years of data for enrollment, achievement, staffing, and finance metrics.</p> <p>Another description of the report is that it is about where we are, and how we got there.</p>	<ul style="list-style-type: none"> • How do enrollment trends impact staffing and funding decisions? • How are funding and staffing decisions impacting student performance? • Is the district changing in a similar way to the state average or not? Why might that be?
Change Over 5 Years With Questions (tab - Change5Yrs_guidingquestions)	A second version of the report arrays all charts from Change Over Five Years on the left, with guiding questions on the right. This could be used for leading a discussion about the data to build a shared picture of what is happening in the district.	
State Context	Shows your district and the state average among all regional and municipal districts in the state (one blue line for each district) for a number of measures, from enrollment to student achievement, staffing, and spending.	<ul style="list-style-type: none"> • Where do we fit among districts in the state? <p><i>This report is descriptive, not analytical.</i></p>
Per Pupil Expenditures	This report provides three views of per-pupil expenditures: 1) a horizontal bar chart by functional spending categories; 2) strip plots that rank your district' spending level among the others for each functional category, and 3) a table of per pupil expenditure amounts.	<ul style="list-style-type: none"> • In the largest spending areas, do our investments align with our priorities? • In what areas could the district reduce?

Attachment 10.c: Copy of RADAR Report--Sudbury vs 10 other towns_act_size (2629 : Budget comparison



Resource Allocation and District Action Reports (RADAR)

Staff FTE per 100 Students	<p>Bar graphs show comparative staffing levels for major staffing categories: leadership, teachers, paraprofessionals, instructional coaches, and clerical staff.</p> <p><i>Note: RADAR uses staff to 100 students ratios instead of the students to staff ratios used in Profiles on the ESE website. The staff to student ratio shows proportionately more staff as a higher number, which makes resource comparisons simpler. The student to staff ratio graphs 18 students per teacher as a higher number than 12 students per teacher, but there are proportionately fewer teachers. Using the staff to students ratio makes staffing charts consistent with other charts about resources in the RADAR tool.</i></p>	<ul style="list-style-type: none"> • How do our investments in staffing categories compare with other districts? • Does it appear that our staffing patterns align with stated district priorities? • Is there an area where we'd like to dig deeper to understand how we are different from one or more other districts?
SPED Enrollment Comparison	<p>Shows students with disabilities (SWDs) as percentages of all students for in and out of district placements and by in-district placements (such as inclusion or substantially separate.)</p> <p>Shows proportions of SEDs who are also economically disadvantaged or English language learners.</p>	<ul style="list-style-type: none"> • How is the profile of our district's program (rate of identification, placements) similar or different from other districts? • How do our SWDs overlap with other special population groups, and what instructional issues does that raise?
SPED Staffing Comparison	<p>See five year trends for the district and state of FTEs per 100 SWDs, for SPED teachers and paraprofessionals</p> <p>Compare FTE numbers and FTEs per 100 SWDs, for SPED teachers and paraprofessionals.</p> <p>Compare FTEs per 100 SWDs and FTE numbers for: SPED teachers and paraprofessionals, SPED services (e.g. therapies), and SPED support (e.g. social workers, psychologists.)</p>	<ul style="list-style-type: none"> • Has the district added or reduced staff in recent years? • How has the balance of teachers and paraprofessionals changed over time? • How does it compare to the state or other districts? • Does the district have more or less staff in these categories than similar districts?



Resource Allocation and District Action Reports (RADAR)

10.c

Select a district, then use the dropdown lists in the first table to select relevant comparison districts, which will appear in the reports throughout the tool. The 2nd and 3rd tables provide lists of districts with similar demographics, and similar capacity to fund schools, for your consideration.

How can you use these reports? The reports in this file have comparative and trend data that can support planning and budgeting discussions.

Select a district:

Sudbury

[Table of Contents](#)

[Change Over 5 Years](#)

[State Context](#)

[Per Pupil Expenditures](#)

[Staff FTE per 100 students](#)

[SPED Enrollment](#)

[SPED Staffing](#)

[Resources](#)

[Getting Started](#)

[More About Data](#)

[Acronyms](#)

SELECTED DISTRICTS FOR COMPARISONS

Select up to ten districts by clicking in the blue cells.	Region	MA Level	Capacity to Fund Foundation Budget*	2016 Per Pupil Spending In-district	2017 Enrollment & Subgroup Percentages				2016 Percentage Proficient or Higher			2016 Median Student Growth Percentile (SGP)	
					Total Enrolled #	Econ Disadv %	SWD %	ELL %	ELA	Math	Science	ELA	Math
Sudbury	GB	2	108%	\$14,861	2,803	5.0	14.9	1.1	88%	82%	65%	53.0	53.0
Lincoln-Sudbury	GB	2	129%	\$16,679	1,568	5.5	18.4	0.3	98%	93%	91%	50.0	62.0
Wellesley	GB	1	227%	\$17,407	5,018	5.7	15.1	2.1	89%	82%	77%	58.0	57.0
Winchester	GB	2	130%	\$12,636	4,623	4.7	16.9	3.6	90%	86%	83%	53.0	55.0
Westford	NE	1	73%	\$12,783	5,120	4.9	13.5	2.1	91%	88%	83%	59.0	60.0
Belmont	GB	1	131%	\$11,951	4,466	7.3	10.0	6.2	92%	87%	82%	60.0	58.0
Needham	GB	2	140%	\$15,620	5,588	5.4	16.3	2.5	87%	83%	77%	57.0	64.0
Wayland	GB	2	166%	\$16,656	2,646	4.7	18.5	2.5	86%	85%	81%	47.5	61.0
Westborough	CN	1	85%	\$14,450	3,805	8.0	15.5	9.4	86%	85%	77%	51.0	61.0
Hopkinton	GB	2	85%	\$13,785	3,462	3.9	12.5	2.4	89%	84%	78%	60.0	65.0
Milton	GB	2	116%	\$13,348	4,150	9.2	15.1	2.0	81%	79%	67%	47.0	48.0

Districts similar to Sudbury based on demographics

	Region	MA Level	Capacity to Fund Foundation Budget*	2016 Per Pupil Spending In-district	2017 Enrollment & Subgroup Percentages				2016 Percentage Proficient/Advanced			2016 Median Student Growth Percentile (SGP)	
					Total Enrolled #	Econ Disadv %	SWD %	ELL %	ELA	Math	Science	ELA	Math
Sudbury	GB	2	108%	\$14,861	2,803	5.0	14.9	1.1	88%	82%	65%	53.0	53.0
Boxford	NE	1	120%	\$16,648	755	3.7	19.1	0.8	84%	84%	75%	59.0	62.0
Concord	GB	2	192%	\$18,012	2,108	5.5	16.6	1.9	88%	87%	72%	59.0	64.0
Kingston	SE	2	64%	\$10,213	1,016	16.1	16.5	1.5	63%	71%	50%	34.0	53.0
Lincoln	GB	2	245%	\$20,964	1,200	5.0	17.8	2.7	80%	68%	65%	62.0	52.0
Middleton	NE	1	92%	\$15,785	699	7.9	18.9	1.1	74%	83%	74%	42.0	60.0
Norfolk	SE	2	88%	\$14,868	937	6.2	14.5	1.8	83%	77%	75%	62.0	55.0
Northborough	CN	2	81%	\$14,891	1,713	9.7	18.2	5.1	77%	68%	62%	52.0	55.0
Somerset	SE	2	66%	\$13,418	1,792	21.1	14.1	0.8	75%	67%	47%	64.0	65.0
Southborough	CN	2	124%	\$16,689	1,295	3.9	14.1	6.1	87%	83%	71%	53.0	54.0
#N/A	#N/A	#N/A	--		#N/A	#N/A	#N/A	#N/A	--	--	--	--	--

Districts similar to Sudbury based on capacity (income, property value) to fund foundation budget *

Charter school districts not included	Region	MA Level	Capacity to Fund Foundation Budget*	2016 Per Pupil Spending In-district	2017 Enrollment & Subgroup Percentages				2016 Percentage Proficient/Advanced			2016 Median Student Growth Percentile (SGP)	
					Total Enrolled #	Econ Disadv %	SWD %	ELL %	ELA	Math	Science	ELA	Math
Sudbury	GB	2	108%	\$14,861	2,803	5.0	14.9	1.1	88%	82%	65%	53.0	53.0
Boxford	NE	1	120%	\$16,648	755	3.7	19.1	0.8	84%	84%	75%	59.0	62.0
Concord	GB	2	192%	\$18,012	2,108	5.5	16.6	1.9	88%	87%	72%	59.0	64.0
Lincoln	GB	2	245%	\$20,964	1,200	5.0	17.8	2.7	80%	68%	65%	62.0	52.0
Middleton	NE	1	92%	\$15,785	699	7.9	18.9	1.1	74%	83%	74%	42.0	60.0
Norfolk	SE	2	88%	\$14,868	937	6.2	14.5	1.8	83%	77%	75%	62.0	55.0
Northborough	CN	2	81%	\$14,891	1,713	9.7	18.2	5.1	77%	68%	62%	52.0	55.0
Somerset	SE	2	66%	\$13,418	1,792	21.1	14.1	0.8	75%	67%	47%	64.0	65.0
Southborough	CN	2	124%	\$16,689	1,295	3.9	14.1	6.1	87%	83%	71%	53.0	54.0
Topsfield	NE	2	108%	\$15,675	626	7.0	18.0	0.0	79%	82%	46%	51.0	59.0

* **Capacity is Combined Effort Yield (CEY)**, a measure used in the Chapter 70 program taking into account local income and property value, as a % of the local foundation budget. A higher percentage indicates greater community wealth. CEY is not calculated for charter schools.

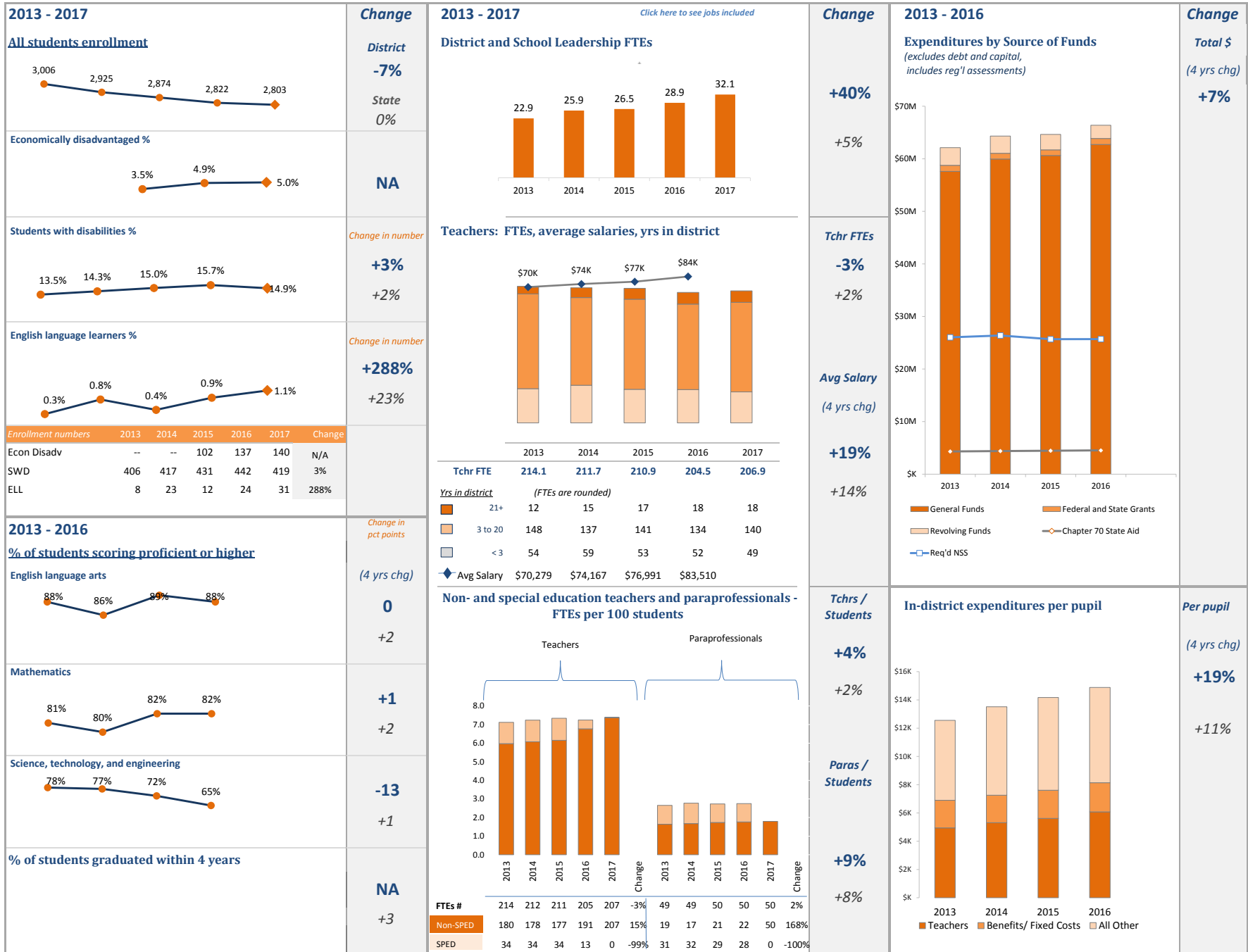
[More about CEY](#)

Packet Pg. 225

Attachment10.c: Copy of RADAR Report--Sudbury vs 10 other towns_act_size (2629 : Budget comparison options)



How can you use this report? This at-a-glance view of 5-year trends can highlight inter-relationships that affect planning and budget decisions. How have enrollment trends affected staffing and funding decisions? If enrollment has been falling, has staffing also decreased? Have staffing and funding decisions had a positive impact on student performance? [More about the data](#)



Sudbury - Change Over Five Years with Questions

"Change Over Five Years" provides a view of 5-year trends can highlight inter-relationships that affect planning and budget decisions. One way to use this report is use the guiding questions at a meeting to go through each set of charts, noting data that's important and specific to your district, and collecting observations into hypotheses and possible further inquiries. You can build a shared understanding of what is changing in the district and the impact of those changes, to assist in planning for the future.

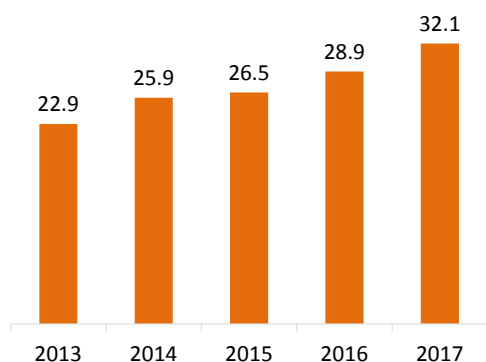
<div>2013 - 2017</div> <div>All students enrollment</div> <div><div><div></div><div>3,006</div></div><div><div></div><div>2,925</div></div><div><div></div><div>2,874</div></div><div><div></div><div>2,822</div></div><div><div></div><div>2,803</div></div></div> <div>Economically disadvantaged</div> <div><div><div></div><div>3.5%</div></div><div><div></div><div>4.9%</div></div><div><div></div><div>5.0%</div></div></div> <div>Students with disabilities</div> <div><div><div></div><div>13.5%</div></div><div><div></div><div>14.3%</div></div><div><div></div><div>15.0%</div></div><div><div></div><div>15.7%</div></div><div><div></div><div>14.9%</div></div></div> <div>English language learners</div> <div><div><div></div><div>0.3%</div></div><div><div></div><div>0.8%</div></div><div><div></div><div>0.4%</div></div><div><div></div><div>0.9%</div></div><div><div></div><div>1.1%</div></div></div> <div><table><tr><th>Enrollment numbers</th><th>2013</th><th>2014</th><th>2015</th><th>2016</th><th>2017</th><th>Change</th></tr><tr><td>Econ Disadv</td><td>--</td><td>--</td><td>102</td><td>137</td><td>140</td><td>N/A</td></tr><tr><td>SWD</td><td>406</td><td>417</td><td>431</td><td>442</td><td>419</td><td>3%</td></tr><tr><td>ELL</td><td>8</td><td>23</td><td>12</td><td>24</td><td>31</td><td>288%</td></tr></table></div>	Enrollment numbers	2013	2014	2015	2016	2017	Change	Econ Disadv	--	--	102	137	140	N/A	SWD	406	417	431	442	419	3%	ELL	8	23	12	24	31	288%	<div>Change</div> <div>District</div> <div>-7%</div> <div>State</div> <div>0%</div> <div>EconDisadv</div> <div>NA</div> <div>Change in number</div> <div>+3%</div> <div>+2%</div> <div>Change in number</div> <div>+288%</div> <div>+23%</div>	<div>Enrollment</div> <div>Is enrollment increasing, decreasing, or flat?</div> <div>Has it changed by a large percentage in the last 5 years?</div> <div>What information do we have about the primary drivers of enrollment changes?</div> <div>What are the likely enrollment trends for the next several years?</div> <div>From our local data, are enrollment changes specific to grades or schools?</div> <div>Is the proportion of special populations changing? For SPED and ESL programs, what is the change in numbers of students (not percentages)? About how many additional or fewer separate classrooms does this imply?</div> <div>Have enrollment changes for all students or special populations been large enough to affect funding or staffing?</div>
Enrollment numbers	2013	2014	2015	2016	2017	Change																								
Econ Disadv	--	--	102	137	140	N/A																								
SWD	406	417	431	442	419	3%																								
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<div>2013 - 2016</div> <div>% of students scoring proficient or higher in MCAS</div> <div>English language arts</div> <div><div><div></div><div>88%</div></div><div><div></div><div>86%</div></div><div><div></div><div>89%</div></div><div><div></div><div>88%</div></div></div> <div>Mathematics</div> <div><div><div></div><div>81%</div></div><div><div></div><div>80%</div></div><div><div></div><div>82%</div></div><div><div></div><div>82%</div></div></div> <div>Science, technology, and engineering</div> <div><div><div></div><div>78%</div></div><div><div></div><div>77%</div></div><div><div></div><div>72%</div></div><div><div></div><div>65%</div></div></div> <div>Median Student Growth Percentiles (SGP)</div> <div>English language arts</div> <div><div><div></div><div>52.0</div></div><div><div></div><div>50.0</div></div><div><div></div><div>67.0</div></div><div><div></div><div>53.0</div></div></div> <div>Mathematics</div> <div><div><div></div><div>55.0</div></div><div><div></div><div>54.0</div></div><div><div></div><div>70.5</div></div><div><div></div><div>53.0</div></div></div> <div>% of students graduated within 4 years</div>	<div>Change in pct points</div> <div>ELA</div> <div>0</div> <div>+2</div> <div>Math</div> <div>+1</div> <div>+2</div> <div>Science</div> <div>-1300%</div> <div>+1</div> <div>ELA</div> <div>+1</div> <div>Math</div> <div>-2</div> <div>Grad Rate</div> <div>NA</div> <div>+3</div>	<div>Student Outcomes</div> <div>Are five year trends up, down or flat? Are they consistent or varying in this period?</div> <div>- Proficiency</div> <div>- Growth</div> <div>- Graduation rate</div> <div>How would we summarize the student outcomes profile?</div> <div>How does our profile compare to annual goals in our district improvement plan?</div> <div>If we look at more detailed data, do particular grades, levels, schools, or subgroups have distinctive differences?</div>																												

Sudbury - Change Over Five Years with Questions

2013 - 2017

[Click here to see positions included](#)

District and School Leadership FTEs


Change
Ldr FTEs

+40%

State
+5%

Staffing

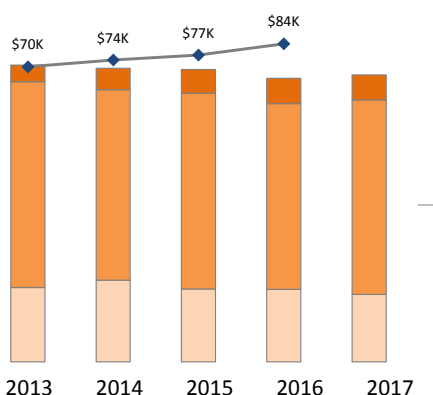
Leadership (includes district administrators, instructional leaders and school leaders)

Does the state's data match up with our local organization charts? If not, can we find a way to make use of the state's data?

What is the district's organization chart for leadership? How did our leadership FTEs change over 5 years? What kinds of positions have been added or reduced?

Do we think we have enough leaders to adequately manage curriculum and learning, schools, and operations?

Teachers: FTEs, average salaries, yrs in district



Tchr FTEs

-3%

+2%

Avg Salary
(4 yrs chg)

+19%

+14%

Teachers (the largest cost center for districts; driven by changes in FTEs, average salaries, and benefits)

Did teacher FTEs increase, decrease or remain the same? Were there any abrupt changes in the number of teachers?

Do the trends of teacher FTEs mirror enrollment trends, or not?

How did enrollment and other factors (list them) drive changes in FTEs over these five years? (examples: school expansion or consolidation, budget cuts, program changes)

How has the age/experience mix of teachers changed over 5 years?

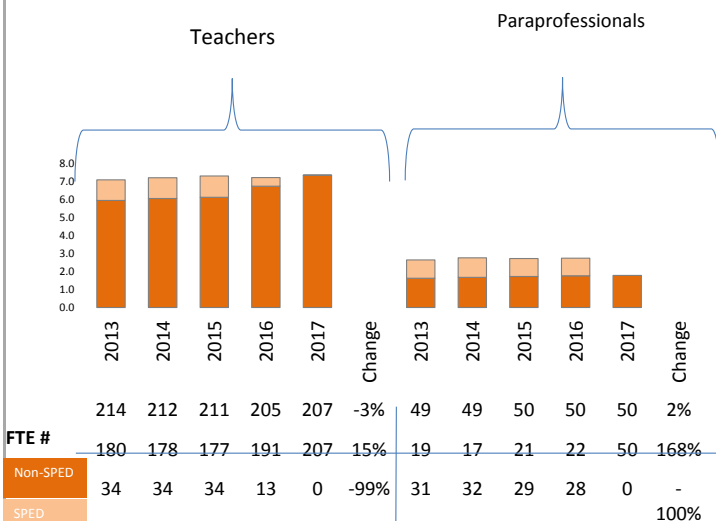
How much has average salary changed? Was it affected in part by the age mix?

Years of experience

(FTEs are rounded)

21+	12	15	17	18	18
3 to 20	148	137	141	134	140
< 3	54	59	53	52	49
Avg Salary	\$70,279	\$74,167	\$76,991	\$83,510	

Non- and special education teachers and paraprofessionals - FTEs per 100 students


Tchrs /
Students

+4%

+2%

Paras /
Students

+9%

+8%

Teachers and paraprofessionals: special education and all others

Does state data reflect local data about SPED staffing? (There is variability in reporting; local data may be more useful for discussion.)

How has the ratio of teachers to students changed over five years? Does the change mirror changes in FTE's and/or the number of students?

How has the ratio of paraprofessionals to students changed over five years? Do these changes mirror the state?

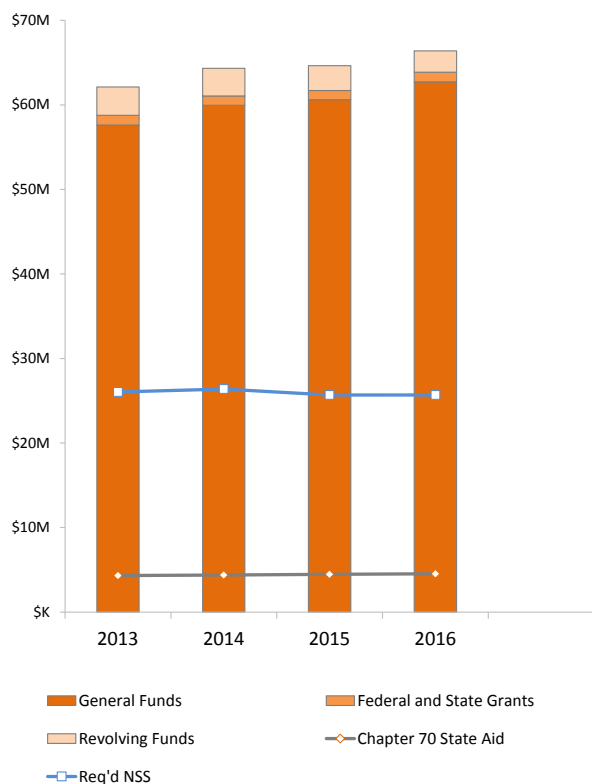
What impact have changes in teacher and paraprofessional staffing had?

Sudbury - Change Over Five Years with Questions

2013 - 2016

Expenditures by Source of Funds

(excludes debt and capital, includes reg'l assessments)



Change

Total \$

(4 yrs chg)

+7%

Finance

Expenditures (in dollars)

Data note: these dollar amounts do not include spending on capital and debt, but do include regional assessments

How has our general fund appropriation from the municipality(s) changed over five years?

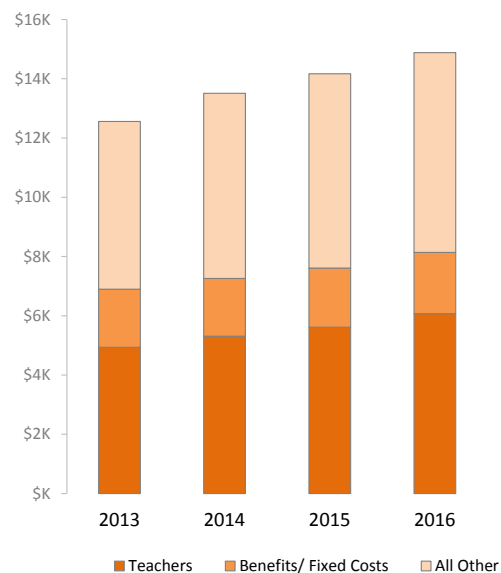
Do we spend more than required net school spending?

Proportionately, how much of our general funds spending is provided directly by the state as Chapter 70 aid?

How has our spending from revolving funds and from state and federal grants changed over 5 years? What has driven any notable changes?

How can we summarize this financial picture of total dollars?

In-district expenditures per pupil



\$ per Pupil

+19%

State
+11%

Expenditures per pupil

Data note: This spending is only for students enrolled in the district's schools (tuitions for students going to choice or charter or SPED placements outside the district are not included). It includes all sources of funds. It does not include spending on capital and debt.

Spending per pupil can increase if dollars go up or if pupils go down.

Has spending per pupil increased, decreased or stayed about the same? How much is due to funding changes vs. enrollment changes?

Have the proportions of expenditures on teacher salaries, benefits (all personnel), and other expenditures changed notably over 5 years?

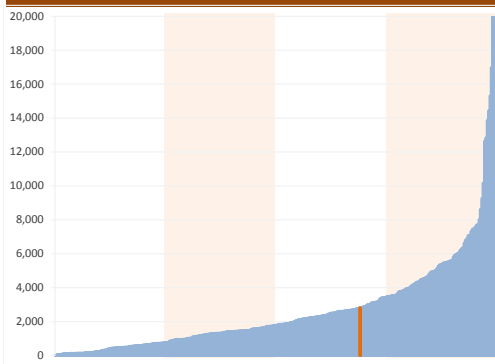
What factors do we know of that may drive these changes? (examples: FTEs, new bargaining agreement)



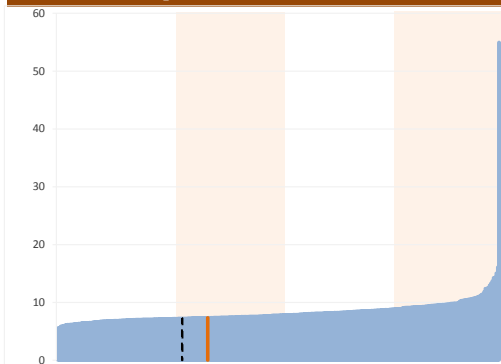
Note: These charts do not include charter school districts.

[More about the c](#)

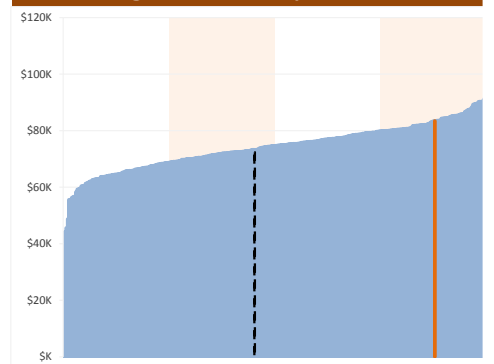
2017 Student Enrollment



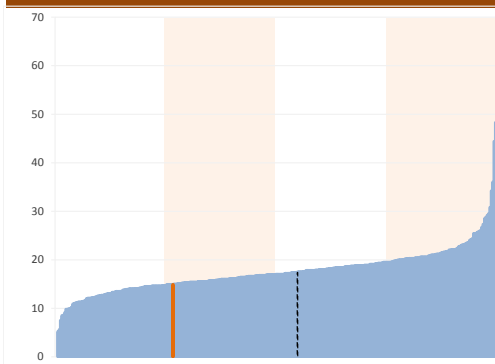
2017 Teachers per 100 Students



2016 Average Teacher Salary



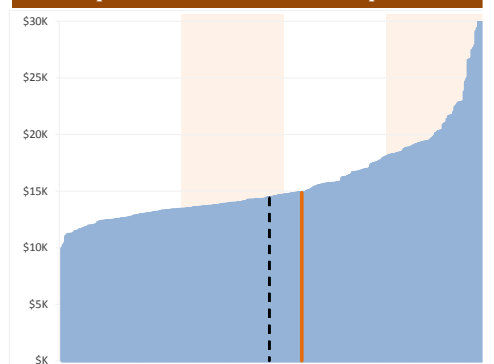
2017 Percent Students with Disabilities



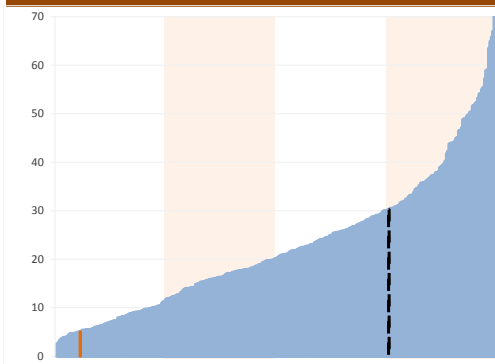
How can you use this report? It includes measures that are independent of district decision-making, such as enrollment and Chapter 70 aid, and other measures that result from decisions made about staffing, salaries, expenditures, special education identification and so on. Comparing an individual district to the other 300+ municipal and regional districts in the state puts it in context. For example, compared to other districts, do we have a larger percentage of students in special populations? Do we have more or less staffing and financial resources?

--- State — Your district

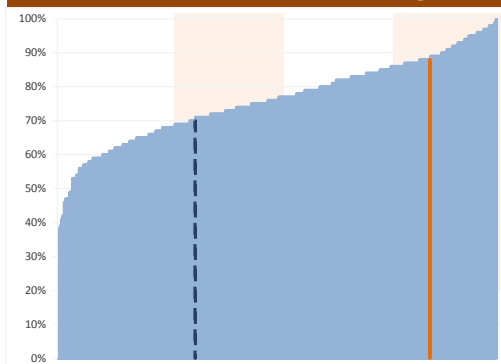
2016 Expenditure Per In-district Pupil



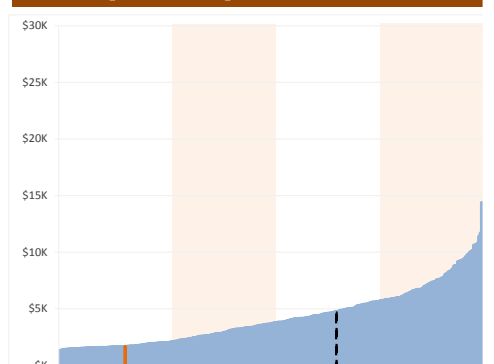
2017 Percent Economically Disadvantaged



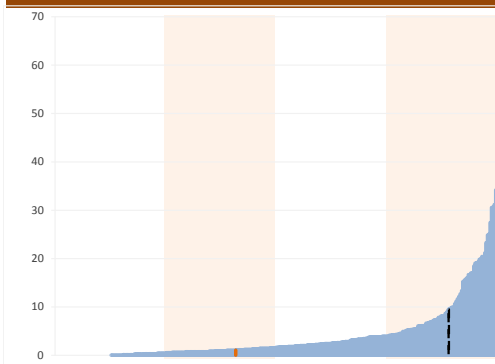
2016 MCAS ELA - Percent Proficient or Higher



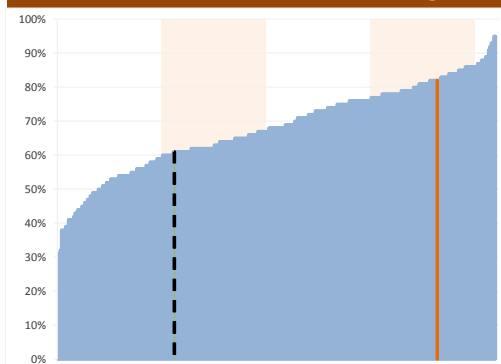
2016 Chapter 70 Aid per Foundation Enrollment



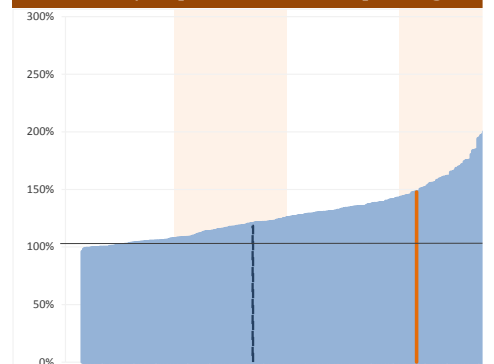
2017 Percent English Language Learners



2016 MCAS Math - Percent Proficient or Higher



2016 Actual/Required Net School Spending



Attachment10.c: Copy of RADAR Report--Sudbury vs 10 other towns_act_size (2629 : Budget comparison options)



Resource Allocation and District Action Reports (RADAR) In-District Per Pupil Expenditures, 2016

10.c

Your district:

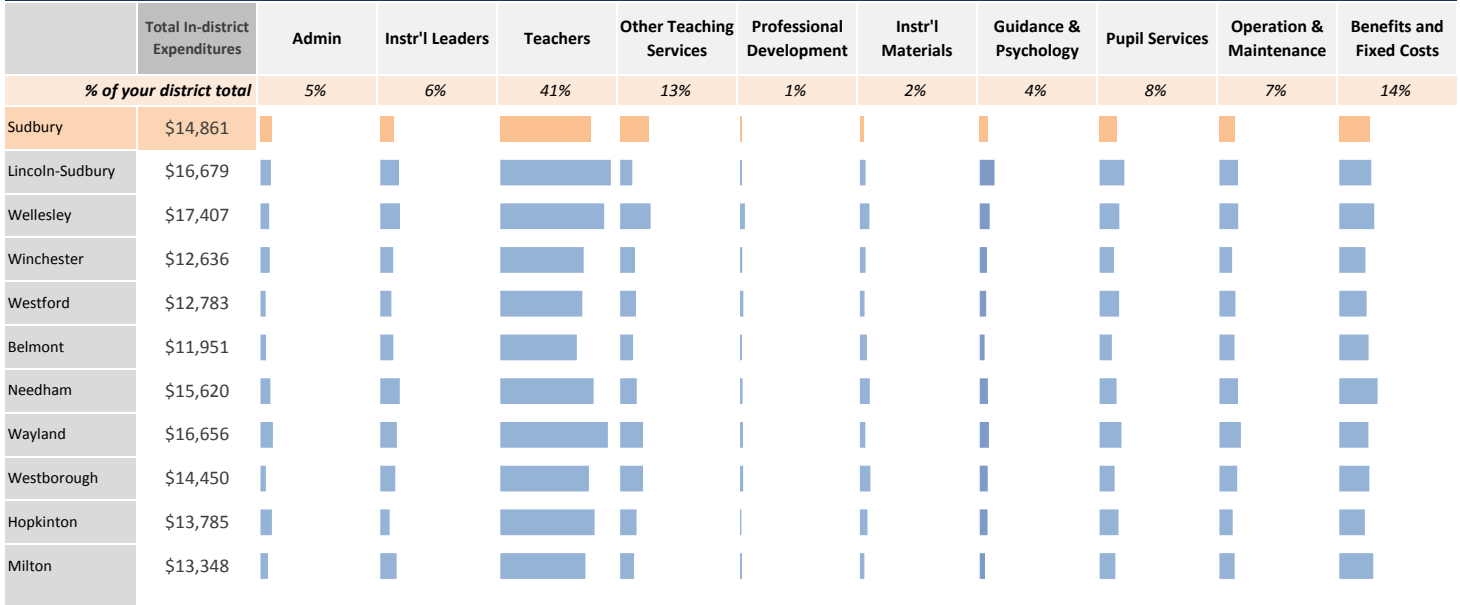
Sudbury

[More about the data](#)

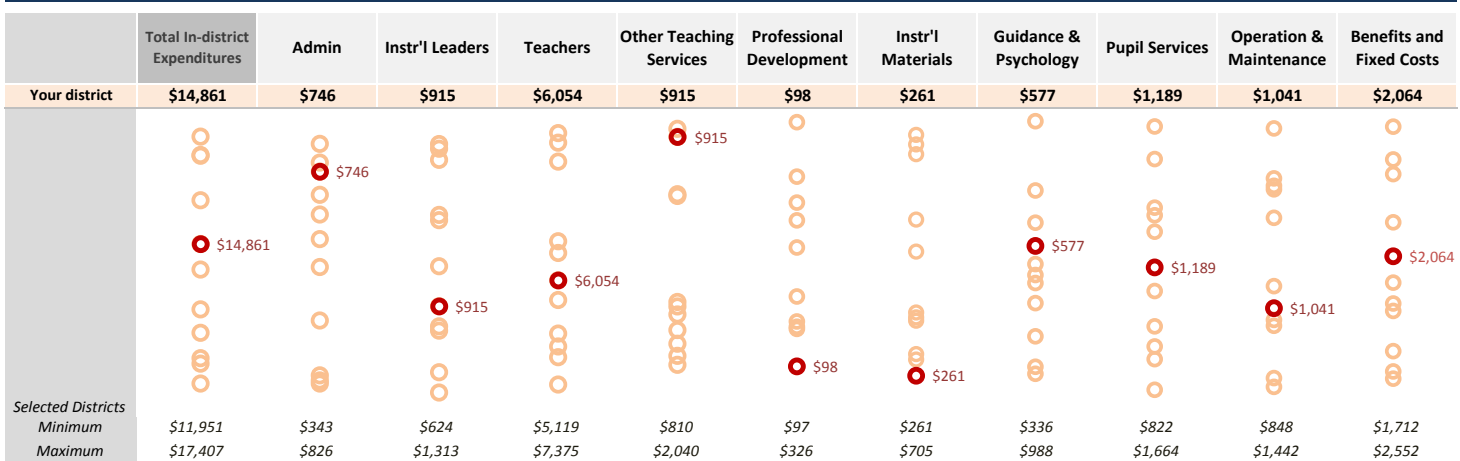
How can you use this report? Per pupil spending allows districts to compare themselves regardless of district size. The first chart makes it easy to see categories where proportionally more funds are spent. The second chart ranks the selected districts and makes it easy to see high and low spenders in a given category. This matters most in the large spending categories. What do spending differences across these districts indicate about their priorities and ours? Are there areas where we would like to look more closely at our spending levels?

[Click here for list of all functions](#)

How did districts apportion their total budgets to each functional category?



Within each spending category, how are these districts ranked?



What are the per pupil expenditures?

	Total In-district Expenditures	Admin	Instr'l Leaders	Teachers	Other Teaching Services	Professional Development	Instr'l Materials	Guidance & Psychology	Pupil Services	Operation & Maintenance	Benefits and Fixed Costs
Sudbury	\$14,861	\$746	\$915	\$6,054	\$1,917	\$98	\$261	\$577	\$1,189	\$1,041	\$2,064
Lincoln-Sudbury	\$16,679	\$699	\$1,248	\$7,375	\$810	\$131	\$378	\$988	\$1,664	\$1,244	\$2,143
Wellesley	\$17,407	\$582	\$1,313	\$6,932	\$2,040	\$326	\$636	\$671	\$1,318	\$1,259	\$2,329
Winchester	\$12,636	\$625	\$860	\$5,574	\$995	\$151	\$385	\$487	\$965	\$848	\$1,747
Westford	\$12,783	\$343	\$735	\$5,473	\$1,063	\$227	\$314	\$428	\$1,300	\$1,077	\$1,824
Belmont	\$11,951	\$373	\$870	\$5,119	\$865	\$130	\$470	\$336	\$822	\$1,010	\$1,955
Needham	\$15,620	\$664	\$1,291	\$6,230	\$1,113	\$180	\$666	\$549	\$1,139	\$1,237	\$2,552
Wayland	\$16,656	\$826	\$1,102	\$7,182	\$1,526	\$196	\$373	\$614	\$1,457	\$1,442	\$1,937
Westborough	\$14,450	\$355	\$997	\$5,925	\$1,534	\$208	\$705	\$532	\$1,005	\$1,185	\$2,004
Hopkinton	\$13,785	\$768	\$624	\$6,305	\$1,095	\$97	\$515	\$519	\$1,264	\$884	\$1,712
Milton	\$13,348	\$497	\$1,090	\$5,682	\$930	\$135	\$302	\$357	\$1,058	\$1,021	\$2,275

Attachment 10.c: Copy of RADAR Report--Sudbury vs 10 other towns_act_size (2629 : Budget comparison options)



Resource Allocation and District Action Reports (RADAR)

Staff FTEs per 100 Students, 2017

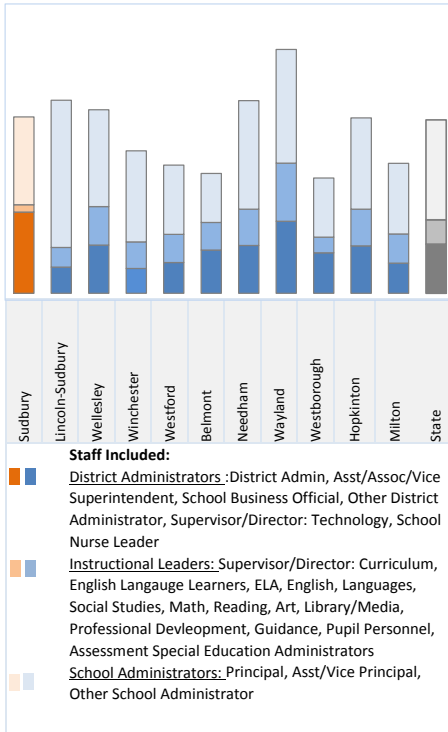
10.c

Your district: **Sudbury**

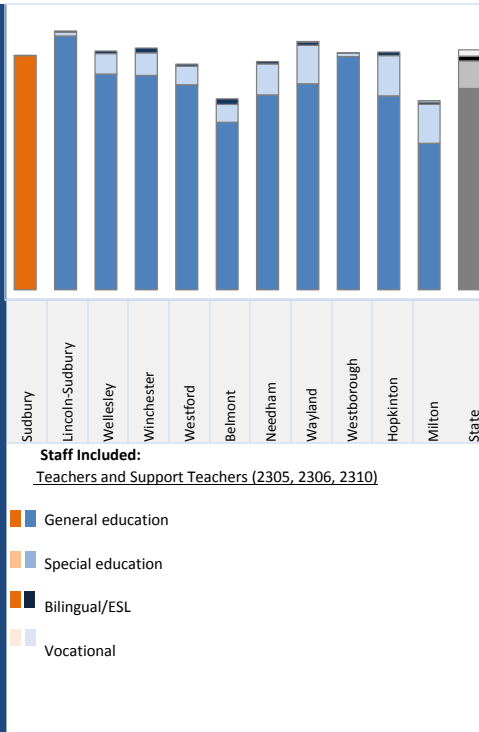
[More about the data](#)

How can you use this report? Staffing is the largest investment in any district. Looking at staff per 100 students allows users to compare relative staffing levels across districts. Do some districts invest more in some staffing categories than others? How do our staffing patterns align with our district priorities?

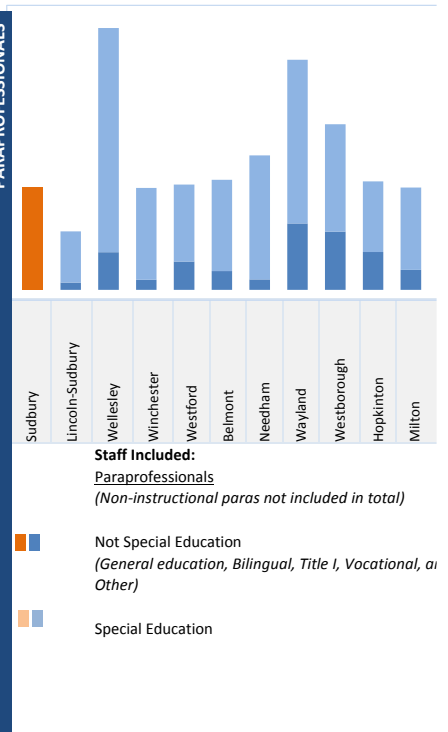
Admin/Instruc/School LEADERSHIP



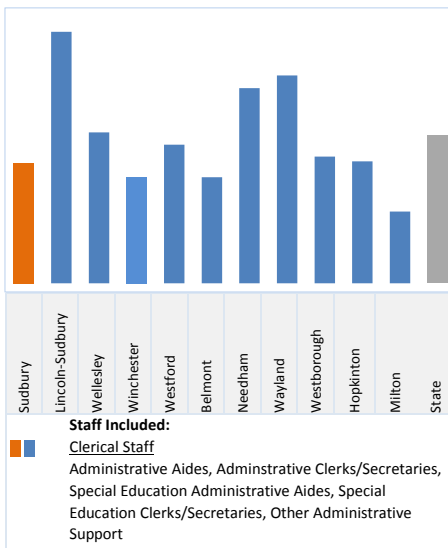
TEACHERS



PARAPROFESSIONALS



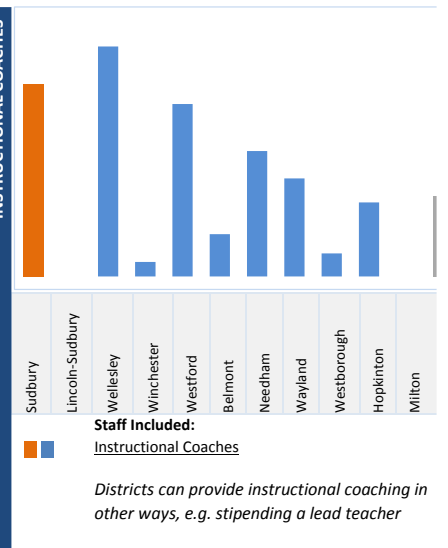
CLERICAL STAFF



Why FTEs per 100 students?

ESE's Profiles reports typically use student to staff ratios, which are intuitively easy to understand. However, a higher number in the ratio means proportionately less staff (e.g. 18 students per teacher means fewer teachers than 12 students per teacher.) In RADAR, we use FTEs per hundred students because a higher bar means proportionately more staff, similar to spending charts.

INSTRUCTIONAL COACHES



	Sudbury	Lincoln-Sudbury	Wellesley	Winchester	Westford	Belmont	Needham	Wayland	Westborough	Hopkinton	Milton	State
Students	2,803	1,568	5,018	4,623	5,120	4,466	5,588	2,646	3,805	3,462	4,150	953,748
Leadership (Adm/Instr/Schl)	24.1	14.8	44.9	32.1	32.0	26.1	52.5	31.5	21.4	29.6	26.3	8,062.1
Teachers	206.9	127.8	377.1	351.8	363.9	268.6	401.7	206.8	283.9	259.2	247.2	72,309.1
Paraprofessionals	50.3	16.1	230.9	82.8	94.7	86.3	132.1	107.0	110.7	66.0	74.6	24,492.8
Instructional Coaches	8.0		17.1	1.0	13.1	2.8	10.4	3.9	1.3	3.8		1,142.6
Clerical Staff	19.6	22.9	44.0	28.5	41.2	27.5	63.4	32.0	28.0	24.5	17.3	8,195.9

Attachment 10.c: Copy of RADAR Report--Sudbury vs 10 other towns_act_size (2629 : Budget comparison options)



Resource Allocation and District Action Reports (RADAR) SPED Enrollment Comparison, 2017

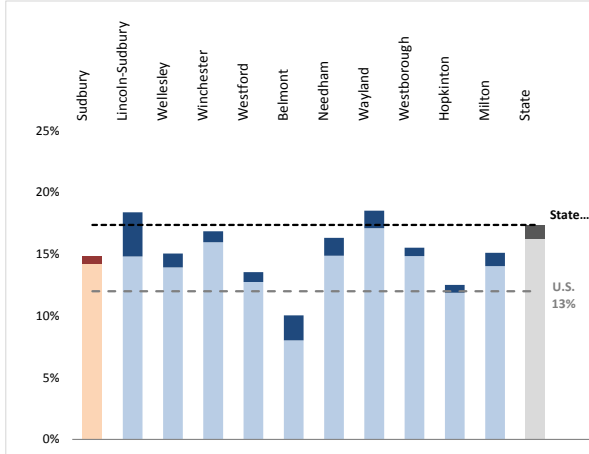
10.c

Your district: **Sudbury** [More about the district](#)

How can you use this report? These charts are snapshots of district special education programs. What percentage of all students are in SPED placements in and out of district (identification rates)? In-district, what percentages of all students (age 6-21) are in inclusive or substantially separate placements? How do students with disabilities overlap with other special population groups?

2017 - Students with Disabilities (SWDs) Enrollment and Placement

% of students with disabilities (in and out of district)



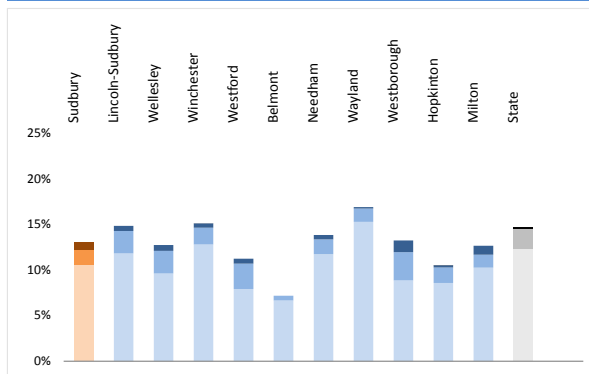
Enrollment (#)

All students (in/out)	2,820	1,626	5,075	4,670	5,161	4,558	5,671	2,684	3,831	3,485	4,195	964
In-district	2,803	1,568	5,018	4,623	5,120	4,466	5,588	2,646	3,805	3,462	4,150	953
All SWDs	419	299	764	787	699	458	926	497	595	436	634	167
In-district, age 6-21	368	241	646	706	580	327	784	453	507	367	531	141
In-district, age 3-5	34	--	61	40	78	39	60	6	62	47	58	15
Out-of-district	17	58	57	41	41	92	82	38	26	22	45	10

Enrollment: SWDs as % of all students

In-district, age 6-21	13.0%	14.8%	12.7%	15.1%	11.2%	7.2%	13.8%	16.9%	13.2%	10.5%	12.7%	14.6%
In-district, age 3-5	1.2%	--	1.2%	0.9%	1.5%	0.9%	1.1%	0.2%	1.6%	1.3%	1.4%	1.6%
In-district	14.3%	14.8%	13.9%	16.0%	12.7%	8.0%	14.9%	17.1%	14.9%	11.9%	14.0%	15.1%
Out-of-district	0.6%	3.6%	1.1%	0.9%	0.8%	2.0%	1.4%	1.4%	0.7%	0.6%	1.1%	1.2%

% of students by in-district placement (age 6-21)



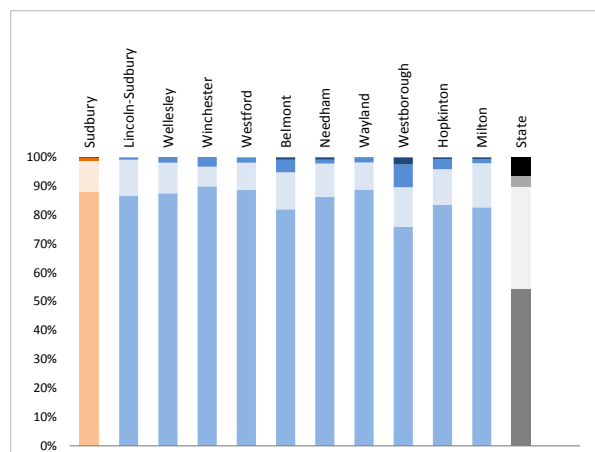
In-district placements (age 6-21)

Full Inclusion	296	192	488	597	409	303	665	410	339	299	430	95
Partial Inclusion	49	40	126	86	143	24	92	39	119	59	60	23
Substantially Separate	23	9	32	22	28	0	27	4	49	8	41	20
Separate Public Schl Services	0	0	0	1	0	0	0	0	0	0	0	1
Services	0	0	0	0	0	0	0	0	0	1	0	0

Placement of SWDs as % of all students

Full Incl	10.5%	11.8%	9.6%	12.8%	7.9%	6.6%	11.7%	15.3%	8.8%	8.6%	10.3%	11.0%
Partial Inclusion	1.7%	2.5%	2.5%	1.8%	2.8%	0.5%	1.6%	1.5%	3.1%	1.7%	1.4%	1.4%
Substantially Separate	0.8%	0.6%	0.6%	0.5%	0.5%	--	0.5%	0.1%	1.3%	0.2%	1.0%	1.0%
Sep Public Schl/Services	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

2017 - in-district SWDs overlap with other special population groups



All students	2,803	1,568	5,018	4,623	5,120	4,466	5,588	2,646	3,805	3,462	4,150	953
Economically disadvantaged	140	87	288	216	249	325	302	124	304	136	380	288
English Language Learners	31	4	105	166	105	279	138	65	359	83	83	90
All students with disabilities	402	241	707	746	658	366	844	459	569	414	589	157
SWD only	355	209	619	671	584	300	728	407	432	346	487	85
SWD and econ disadv	42	30	75	51	62	47	98	44	78	51	90	55
SWD and ELL	4	2	11	22	12	16	11	7	45	14	8	5
SWD, ELL and econ disadv	1	0	2	2	0	3	7	1	14	3	4	10

Percent of students with disabilities

SWD only	88%	87%	88%	90%	89%	82%	86%	89%	76%	84%	83%	83%
SWD and econ disadv	10%	12%	11%	7%	9%	13%	12%	10%	14%	12%	15%	15%
SWD and ELL	1%	1%	2%	3%	2%	4%	1%	2%	8%	3%	1%	1%
SWD, ELL and econ disadv	0%	0%	0%	0%	0%	1%	1%	0%	2%	1%	1%	1%



Resource Allocation and District Action Reports (RADAR) SPED Staffing Comparison, 2013 - 2017

[Back to home](#)
10.c

Your district: **Sudbury**

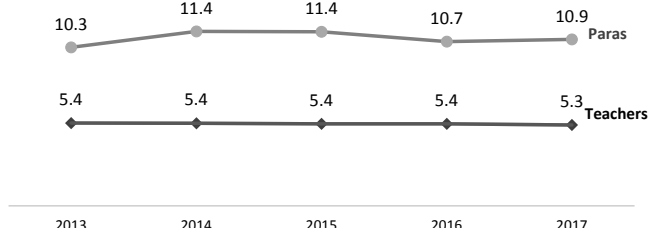
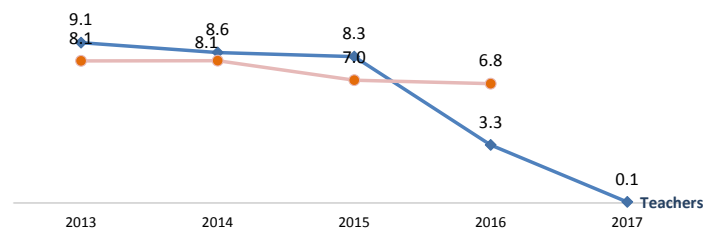
[More about the data](#)

How can you use this report? The top charts show how ratios of SPED teachers and paras to 100 SWDs changed over five years, for the target district and the state. Other charts show how your district's staffing compares with selected districts and the state. How has the balance of teachers and paraprofessionals changed over time? How does it currently compare to the state or other districts? What can we say about SPED programs comparatively, as we look at these charts and the SPED enrollment comparisons?

2013 - 2017, Special Education Teachers and Special Education Paraprofessionals per 100 SWDs

Sudbury

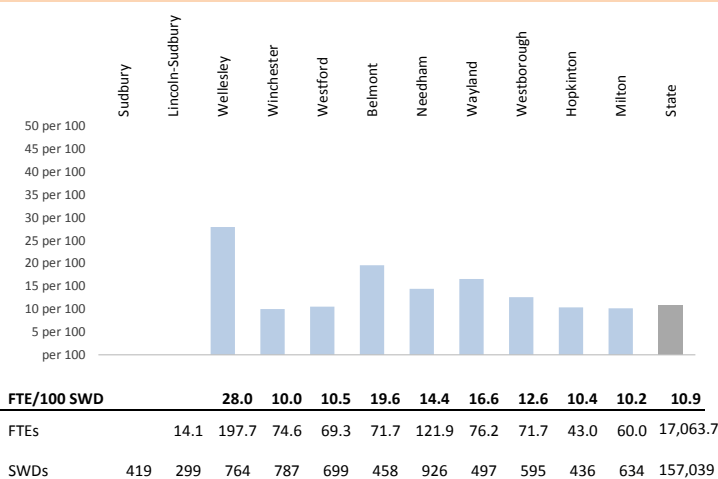
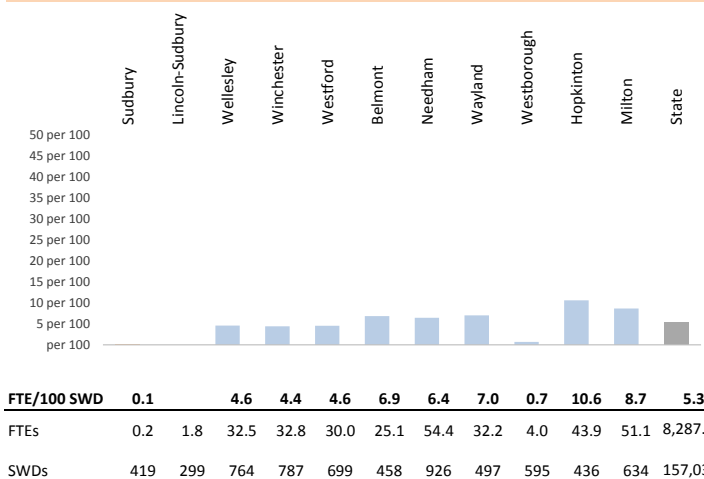
State



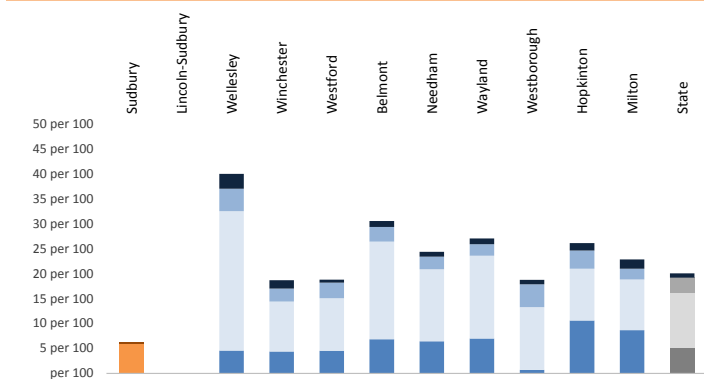
2017 - FTEs per 100 students with disabilities

SPED teachers

SPED paraprofessionals



All SPED staffing categories: teachers, paraprofessionals, related services, student support



SPED FTEs per 100 SWDs

Teacher	0.1	0.0	4.6	4.4	4.6	6.9	6.4	7.0	0.7	10.6	8.7	5.3
Paras	0.0	0.0	28.0	10.0	10.5	19.6	14.4	16.6	12.6	10.4	10.2	10.9
Services	5.9	0.0	4.5	2.6	3.1	2.9	2.5	2.3	4.6	3.6	2.2	3.1
Support	0.2	0.0	3.0	1.7	0.6	1.2	0.9	1.2	0.9	1.5	1.9	0.9
FTEs												
Teacher	0.2	1.8	32.5	32.8	30.0	25.1	54.4	32.2	4.0	43.9	51.1	8,287.4
Paras		14.1	197.7	74.6	69.3	71.7	121.9	76.2	71.7	43.0	60.0	17,063.7
Services	23.6	0.8	31.8	19.6	20.6	10.7	21.4	10.6	26.1	15.1	12.7	4,820.9
Support	1.0	5.1	20.9	12.5	4.0	4.4	8.0	5.4	5.0	6.2	11.0	1,339.4



More about data

[Staff Definitions](#)[Acronyms & Resources](#)

Report - Change Over 5 Years

Note: charts in this report use data for the five most recent years of enrollment. Some data sets are typically a year behind (such as assessment results and finance.) For these, the data that overlaps with the enrollment years is used, typically 4 instead of 5 years of data.

Student Enrollment and Assessment Results Data Sources: Profiles Statewide Reports

Data in report	Data Collection	Links
All students enrollment	Student Information Management System (SIMS) Oct. 1st data collection	Student enrollment and indicators: enrollment by grade
Economically disadvantaged, students with disabilities, English language learners	SIMS Oct. 1st data collection <i>as number and as % of all students enrollment</i>	Student enrollment and indicators: selected populations
% of students scoring proficient or higher	Proficiency from either MCAS or PARCC assessments	MCAS results PARCC results
% of students graduated within 4 years	Calculated by Dept of Elementary and Secondary Education (DESE)	Graduation rates

Staffing Data Sources: Profiles Statewide Reports; DART Detail: Staffing and Finance; School Finance Webpage; EPIMS

Data in report	Data Collection	Links
District and school leadership FTEs	Education Personnel Management System (EPIMS) Oct. 1st data collection <i>District Administrators, Instructional Leaders, School Leaders (see Staff Definitions link above)</i>	DART Detail: Staffing and Finance (DistrictStaff)
Teachers:		
FTEs	EPIMS Oct. 1st data collection	Teachers by program area
Average salaries	End of Year Report (EOYR) data; FTE calculations from end of year EPIMS	Average teacher salaries
Years in district	EPIMS Oct. 1st data collection SR011	(calculated for RADAR)
Non- and special education teachers - FTEs per 100 students	Teacher FTEs by program area; All students/100	(data from above links)
Non- and special education paraprofessionals - FTEs per 100 students	Paraprofessional FTEs from DART Detail: Staffing and Financing; All students/100	DART Detail: Staffing and Finance (SPEDStaff)

Finance Data Sources: School Finance Webpage

Data in report	Data Collection	Links
Expenditures by Source of Funds	End of Year Report (EOYR) data	DART Detail: Staffing and Finance (ExpendBySource)
Required net school spending and Chapter 70 state aid	Chapter 70 District Profiles	School Finance - Chapter 70 Program
In-district expenditures per pupil	EOYR data; FTE pupils calculated from SIMS end of year data by School Finance Office	School Finance Per Pupil Expenditures, All Funds

Attachment 10.c: Copy of RADAR Report--Sudbury vs 10 other towns_act_size (2629 : Budget comparison options)



More about data

Report - State Context

See data sources in Change Over 5 Years

Report - In-district Per Pupil Expenditures

In-district per pupil expenditures are directly comparable across districts. Out-of-district expenditures are not comparable because there is a unique mix of tuitions for each district. A district with many choice tuitions has a lower rate for out-of-district costs than a district with only SPED out-placement tuitions.

Finance Data Sources: School Finance Webpage

Data in report	Data Collection	Links
In-district expenditures per pupil	EOYR data; FTE pupils calculated from SIMS end of year data by School Finance Office	School Finance Per Pupil Expenditures, All Funds

Report - Staff FTEs per 100 Students

The ratio of FTEs per 100 students makes it easier to compare districts than the traditional students per FTEs. Charts reflect the proportion of staffing compared to other districts, with a high number meaning more teachers.

Staffing Data Sources: Profiles Statewide Reports; DART Detail: Staffing and Finance; School Finance Webpage; yrs?

Data in report	Data Collection	Links
Leadership Teachers Paraprofessionals Clerical staff Instructional coaches	EPIMS Oct. 1st data collection see Staff Definitions link above for positions included	DART Detail: Staffing and Finance (DistrictStaff)



More about data

Report - SPED Enrollment Comparison

This data is not available on the Department website. See link to SIMS Data Handbook for the fields used for calculations from SIMS Oct. 1st data.

SPED Enrollment Data - see SIMS fields: http://www.doe.mass.edu/infoservices/data/sims/SIMS-DataHandbook.pdf		
Data in report	Definition	Data fields
Total students	Students enrolled in- and out-of-district	DOE011
In-district placements, age 6-21	Full inclusion: <i>SPED services outside the general education classroom less than 21% of the time</i>	DOE034
	Partial inclusion: <i>SPED services outside the classroom 21% to 60% of the time</i>	
	Substantially separate classroom: <i>SPED services outside the general education classroom more than 60% of the time</i>	
	Other: <i>separate public day school (in-district); homebound/hospital</i>	
Out-of-district students	Students with disabilities who are enrolled out-of-district	DOE011 = 02
SWDs overlap with other special population groups	Each in-district student with disability (age 6-21) is put into one of these groups:	DOE034, DOE025, DOE019
	<i>o Disability only</i>	
	<i>o Disability and economically disadvantaged</i>	
	<i>o Disability and English language learner</i>	
	<i>o All three subgroups</i>	

Report - SPED Staffing Comparison

SPED Staffing Data: DART Detail: Staffing and Finance		
Data in report	Data Collection	Links
Teachers	EPIMS Oct. 1st data collection	DART Detail: Staffing and Finance (SPEDStaff)
Paraprofessionals		and
Services	<i>Audiologist, occupational and physical therapists, peripatologist, speech pathologist</i>	Staff Definitions
Support	<i>School adjustment counselor, school psychologist, school social worker</i>	



Resource Allocation and District Action Reports (RADAR)

Acronyms and Additional Resources

[More about data](#)

Acronyms

CEY	Combined Effort Yield	A measure used in the Chapter 70 formula to determine each municipality's relative wealth (local income and equalized property value) for the purposes of determining local contribution requirements and state aid amounts.
Chap70	Chapter 70	The formula that the state uses to determine local spending requirements and state aid to school districts each fiscal year.
Econ Disadv.	Economically Disadvantaged	Students are identified as economically disadvantaged if they are enrolled in the Supplemental Nutrition Assistance Program (SNAP), Transitional Aid to Families with Dependent Children (TAFDC), foster care, or MassHealth. Note that this measure replaced low-income, which was based on student eligibility for free or reduced lunch, in the 2015 – 2016 school year.
ELA	English Language Arts	ELA is one of the components of the state's MCAS exam that is given to students in grades 3 – 8 and grade 10 each year.
ELL	English language learners	A child who does not speak English and who is not currently able to perform ordinary classroom work in English.
EOYR	End of Year Financial Report	ESE collects school district expenditure data following each fiscal year through the EOYR collection. This collection does not include charter schools or collaboratives.
EPIMS	Educator Personnel Information Management System	The Education Personnel Information Management System (EPIMS) collects demographic data and work assignment information on individual public school educators. This information enables Massachusetts to comply fully with the No Child Left Behind Act by accurately reporting on highly qualified teachers. The EPIMS data also will be used to perform greatly needed analysis on our educator workforce that, over time, will identify high need areas, evaluate current educational practices and programs, and assist districts with their recruiting efforts.
FTE's	full time equivalents	A measure that accounts for the amount of time that a staff person works over the course of the school year relative to a full-time schedule.
MCAS	Massachusetts Comprehensive Assessment System	The MCAS is the Commonwealth's summative assessment in ELA, mathematics, and science that is given to students in grades 3 – 8 and grades 9 (science only) and 10 each year.
PARCC	Partnership for the Assessment of Readiness for College and Careers	Massachusetts school districts were given the option to administer the PARCC assessment instead of MCAS in grades 3 – 8 during 2015 and 2016, which means that state assessment data for these years incorporates PARCC results (see Appendix C). In the fall of 2015, the Board of Elementary and Secondary Education voted to develop a next generation MCAS assessment, which will be administered for the first time in the spring of 2017, replacing the previous version of MCAS and PARCC.
RADAR	Resource Allocation and District Action Reports	A new set of data reports being developed by ESE to inform districts on how they are using their people, time, and money to impact student outcomes.

Attachment 10.c: Copy of RADAR Report--Sudbury vs 10 other towns_act_size (2629 : Budget comparison options)



Resource Allocation and District Action Reports (RADAR)

Acronyms and Additional Resources

[More about data](#)

Req'd NSS	Required Net School Spending	The Commonwealth uses the Chapter 70 formula to determine each school districts required NSS amount, which is the sum of the districts required local contribution and Chapter 70 aid. The expenditure categories included in NSS cover a district's operational expenditures, excluding transportation, capital, and debt service.
SGP	Student Growth Percentile	The student growth percentile (abbreviated SGP) measures how much a student's performance has improved from one year to the next relative to his or her academic peers: other students statewide with similar MCAS test scores in prior years. The median student growth percentile is the midpoint of student growth percentiles in the district or school. Half of the students had student growth percentiles higher than the median; half had lower.
SIMS	Student Information Management System	SIMS is a student-level data collection system that allows the Department to collect and analyze student data to meet federal and state reporting requirements and to inform policy and programmatic decisions
SWD	Students with disabilities	Students receiving special education services through an Individual Education Plan (IEP).

Attachment10.c: Copy of RADAR Report--Sudbury vs 10 other towns_act_size (2629 : Budget comparison options)



Resource Allocation and District Action Reports (RADAR)

Acronyms and Additional Resources

[More about data](#)

Additional Resources

Data Collection	www.doe.mass.edu/infoservices	Information for schools and districts on the non-fiscal data reports collected by the Department, including the Student Information Management System (SIMS), Education Personnel Information Management System (EPIMS), the on-line data collection forms, Directory Administration, and other data collection efforts.
District Analysis and Review Tools (DARTs)	www.mass.gov/ease/dart	The DARTs are a series of data reports that offer snapshots of district and school performance, allowing users to easily track select data elements over time, and make sound, meaningful comparisons to the state or to comparable organizations. The data elements in each DART tool are linked to a broader strategic framework defining the characteristics of effective educational organizations and cover a broad range of district and school interests including demographic, assessment, student support, educator, financial, and achievement gap data.
EDWIN	http://www.doe.mass.edu/edwin/	A collaborative effort between ESE and local school districts to centralize K-12 education data into one state coordinated data repository hosted by the Department. Edwin Reports are only available to authorized school district personnel.
School/District Profiles	http://profiles.doe.mass.edu/	Publicly available data about Massachusetts' elementary and secondary schools, including all public school districts, charter schools, collaboratives, and approved special education schools. This site includes data reports on student assessment, MCAS and PARCC, accountability, educator preparation, educators, student enrollment and related indicators, and finance.
School Finance	http://www.doe.mass.edu/finance/accounting/eoy/ http://www.doe.mass.edu/finance/statistics/	ESE collects school finance data through the annual End of Year Report (EOYR) collection. This includes annual expenditure data from all public school districts, excluding charter schools and collaboratives. Users who do not have access to Edwin Analytics who are interested in requesting finance data that is not available on the School and District Profiles or School Finance websites can submit data requests to: mking@doe.mass.edu .
Linking Assessment Results and Reporting Data	http://www.doe.mass.edu/parcc/	The 2015 assessment and accountability data are reported for all schools, regardless of whether the school administered MCAS or the Partnership for Assessment of Readiness for College and Careers (PARCC). Through a statistical approach called equipercentile linking, ESE has linked 2015 MCAS and PARCC results and calculated achievement levels and transitional Composite Performance Index (CPI) scores for each school taking PARCC. Using a similar approach, transitional SGPs have also been calculated for schools that administered PARCC. For more information about the equipercentile linking process.

Staff Definitions - Job Codes and Assignment Codes

The following tables show how EPIMS codes are categorized in staffing positions and teaching areas in RADAR staffing reports. A complete description of EPIMS codes is on the ESE website in Appendix A-G of the Data Handbook:

<http://www.doe.mass.edu/infoservices/data/epims/>

Staff Categories - EPIMS Job Code	Code	Staff Categories (continued)	Code
District Administrators		Instructional Support	
Superintendent	1200	Educational Interpreter	3324
Asst/Assoc/Vice Superintendent	1201	Diagnostic and Evaluation Staff	3325
School Business Official	1202	Recreation Specialist	3326
Other District Administrator	1205	Rehabilitation Counselor	3327
Supervisor/Director: Technology	1224	Work Study Coordinator	3328
School Nurse Leader	1226	Guidance Counselor	3329
		Librarian	3330
Other Instructional Leaders		Junior ROTC	3340
Supervisor/Director of Guidance	1210	School Adjustment Counselor - Non-SWD	3350
Supervisor/Director of Pupil Personnel	1211	School Psychologist - Non-SWD	3360
Special Education Administrator	1212	School Social Worker - Non-SWD	3370
Supervisor/Director: Arts	1213	Other Professional Support (DSSR)	3381
Supervisor/Director of Assessment	1214	Special Education Instructional Support	
Supervisor/Director: Curriculum	1215	School Adjustment Counselor - SWD	3351
Supervisor/Director: English Language Learner	1216	School Psychologist - SWD	3361
Supervisor/Director: English	1217	School Social Worker - SWD	3371
Supervisor/Director: Foreign Language	1218	Special Education Related Staff	
Supervisor/Director: History/Social Studies	1219	Audiologist	3411
Supervisor/Director: Library/Media	1220	Occupational Therapist	3421
Supervisor/Director: Mathematics	1221	Physical Therapist	3431
Supervisor/Director: Reading	1222	Peripatologist	3441
Supervisor/Director: Science	1223	Speech Pathologist	3451
Supervisor/Director: Professional Development	1225	Other Related Special Education Staff	3461
School Administrators		Medical/Health Services	
Principal	1305	Physician	5010
Asst/Vice Principal	1310	Psychiatrist	5015
Other School Administrator	1320	School Nurse - Non-Special Education	5020
Instructional Coaches	2330	School Nurse - Special Education	5021
Teachers		Clerical	
Teacher	2305	Administrative Aides	6100
Teacher - support content instruction	2310	Administrative Clerks/Secretaries	6110
Substitutes (Long-term)	2325	Special Education Administrative Aides	6120
Paraprofessionals	4100	Special Education Clerks/Secretaries	6130
Tutors	3323	Other Administrative Support	6150
		Tech Support	
		Information Services and Technical Support	6140

Attachment 10.c: Copy of RADAR Report--Sudbury vs 10 other towns_act_size (2629 : Budget comparison options)

Staff Definitions - Job Codes and Assignment Codes

Teaching Areas - EPIMS Assignment Code	Code
General education	
Not available	000
Core Subject: Non-Secondary Level Classroom Teacher	001
Core Subject: Secondary Level Classroom Teacher	002
Core Support Content General Education	012
Core Subject: Reading Teacher	017
Non-Core Subject: Non-Secondary Level Classroom Teacher	212
Non-Core Subject: Secondary Level Classroom Teacher	213
Non-Core Support Content General Education	215
Vocational-technical	
Non-Core Subject: Career and Technical Education	208
Special Education	
Core Subject: Mild/Moderate Disabilities Sole Content	003
Core Subject: Severe Disabilities Sole Content	004
Core Subject: Mild/Moderate Disabilities Consultative	005
Core Subject: Severe Disabilities Consultative	006
Core Subject: Vision Impairments	007
Core Subject: Deaf/Hard of Hearing	008
Non-Core Subject: Vision Impairments	209
Non-Core Subject: Speech/Language/Hearing Disorder	210
Non-Core Subject: Deaf/Hard of Hearing	211
Non-Core Subject: Other Special Education Instruction	214
Special Ed: Shared Physical Education at Non-Secondary	301
Special Ed: Shared Physical Education at Secondary	302
Special Ed: Shared Vocational Education	303
Special Ed: Other Shared Instructional Staff	304
English Language Learners	
Core Subject: Sheltered Content Teacher > or = 50%	009
Core Subject: Non-Secondary Level ESL Teacher	010
Core Subject: Secondary Level ESL Teacher	011
Non-Secondary Content Support ESL Teacher	014
Core Subject: Other Bilingual Education	016
Core Subject: Sheltered Content Teacher < 50%	019
Secondary Content Support ESL Teacher	020

LEA	District	Out-of-			Administration	Instructional Leadership	Teachers	Other Teaching Services	Professional Development	Instructional Materials, Equipment and Technology	Guidance, Counseling and Testing	Pupil Services	Operations and Maintenance	Insurance, Retirement Programs and Other	Total In-District Expenditures	Total Expenditures	District Notes
		In-District FTE Pupils	District FTE Pupils	Total FTE Pupils													
0009	Andover	\$ 6,104.60	\$ 122.20	\$ 6,226.80	\$ 385.02	\$ 952.45	\$ 6,177.83	\$ 1,690.75	\$ 254.16	\$ 205.27	\$ 614.86	\$ 1,203.69	\$ 1,373.83	\$ 2,643.48	\$ 15,501.33	\$ 16,388.72	
0023	Bedford	\$ 2,529.70	\$ 83.00	\$ 2,612.70	\$ 747.47	\$ 1,244.77	\$ 7,393.19	\$ 982.28	\$ 248.13	\$ 393.07	\$ 488.44	\$ 1,278.53	\$ 1,131.22	\$ 2,325.08	\$ 16,232.18	\$ 18,119.83	
0026	Belmont	\$ 4,324.90	\$ 99.30	\$ 4,424.20	\$ 373.16	\$ 869.96	\$ 5,119.43	\$ 865.10	\$ 129.61	\$ 470.25	\$ 335.84	\$ 822.49	\$ 1,010.31	\$ 1,954.86	\$ 11,951.00	\$ 13,348.83	
0038	Boxford	\$ 738.40	\$ 7.40	\$ 745.80	\$ 631.46	\$ 1,262.08	\$ 6,774.08	\$ 1,526.37	\$ 148.46	\$ 634.25	\$ 354.53	\$ 1,246.60	\$ 1,309.67	\$ 2,760.53	\$ 16,648.04	\$ 17,036.59	
0051	Carlisle	\$ 606.50	\$ 11.00	\$ 617.50	\$ 1,110.84	\$ 950.17	\$ 8,518.76	\$ 2,105.18	\$ 670.80	\$ 704.27	\$ 471.00	\$ 1,398.82	\$ 1,808.43	\$ 1,316.12	\$ 19,054.39	\$ 19,709.15	
0067	Concord	\$ 2,077.30	\$ 37.10	\$ 2,114.40	\$ 866.06	\$ 938.39	\$ 7,453.45	\$ 2,633.47	\$ 199.22	\$ 1,013.38	\$ 481.20	\$ 1,387.82	\$ 1,405.46	\$ 1,633.24	\$ 18,011.68	\$ 18,856.55	
0078	Dover	\$ 480.60	\$ 11.50	\$ 492.10	\$ 1,398.99	\$ 1,002.38	\$ 7,303.61	\$ 1,804.08	\$ 85.17	\$ 519.19	\$ 411.74	\$ 873.35	\$ 1,467.28	\$ 3,344.70	\$ 18,210.51	\$ 23,232.55	
0082	Duxbury	\$ 3,169.50	\$ 41.70	\$ 3,211.20	\$ 480.25	\$ 834.93	\$ 5,710.56	\$ 1,094.75	\$ 67.97	\$ 429.54	\$ 412.43	\$ 1,236.79	\$ 835.40	\$ 2,101.03	\$ 13,203.66	\$ 13,607.35	
0136	Holliston	\$ 2,888.60	\$ 86.10	\$ 2,974.70	\$ 369.74	\$ 1,098.53	\$ 5,580.57	\$ 1,048.06	\$ 213.88	\$ 144.42	\$ 513.39	\$ 877.59	\$ 910.86	\$ 1,169.83	\$ 11,926.88	\$ 13,186.32	
0139	Hopkinton	\$ 3,425.60	\$ 78.30	\$ 3,503.90	\$ 767.58	\$ 624.37	\$ 6,305.28	\$ 1,095.44	\$ 97.30	\$ 515.33	\$ 519.13	\$ 1,263.91	\$ 884.33	\$ 1,712.10	\$ 13,784.76	\$ 14,127.44	
0141	Hudson	\$ 2,788.70	\$ 170.20	\$ 2,958.90	\$ 699.45	\$ 811.69	\$ 6,312.41	\$ 1,492.46	\$ 410.29	\$ 286.21	\$ 503.48	\$ 1,344.99	\$ 1,035.70	\$ 1,692.13	\$ 14,588.81	\$ 15,528.96	
0145	Kingston	\$ 1,064.00	\$ 50.50	\$ 1,114.50	\$ 333.88	\$ 544.24	\$ 4,238.34	\$ 725.32	\$ 107.33	\$ 420.54	\$ 372.19	\$ 1,023.03	\$ 1,236.20	\$ 1,211.49	\$ 10,212.57	\$ 13,310.59	
0155	Lexington	\$ 6,913.10	\$ 113.10	\$ 7,026.20	\$ 678.28	\$ 1,453.96	\$ 6,489.01	\$ 1,883.88	\$ 287.42	\$ 399.45	\$ 737.47	\$ 1,364.14	\$ 1,025.42	\$ 2,621.54	\$ 16,940.56	\$ 18,002.58	
0157	Lincoln	\$ 1,204.70	\$ 23.90	\$ 1,228.60	\$ 1,180.82	\$ 1,633.02	\$ 8,618.41	\$ 2,226.51	\$ 407.36	\$ 640.73	\$ 493.27	\$ 1,304.80	\$ 1,515.03	\$ 2,944.10	\$ 20,964.04	\$ 21,798.63	
0174	Maynard	\$ 1,419.30	\$ 106.50	\$ 1,525.80	\$ 930.16	\$ 1,137.57	\$ 5,125.61	\$ 1,532.42	\$ 295.59	\$ 219.92	\$ 566.72	\$ 1,104.29	\$ 1,080.08	\$ 2,682.61	\$ 14,674.97	\$ 14,889.33	
0184	Middleton	\$ 702.40	\$ 6.40	\$ 708.80	\$ 668.16	\$ 1,220.99	\$ 6,159.77	\$ 1,776.64	\$ 120.86	\$ 582.82	\$ 291.40	\$ 1,575.82	\$ 1,303.45	\$ 2,084.76	\$ 15,784.67	\$ 16,142.37	
0189	Milton	\$ 4,080.00	\$ 75.00	\$ 4,155.00	\$ 496.77	\$ 1,090.32	\$ 5,682.30	\$ 930.23	\$ 134.77	\$ 301.92	\$ 357.13	\$ 1,058.08	\$ 1,020.90	\$ 2,275.34	\$ 13,347.78	\$ 14,387.57	
0208	Norfolk	\$ 913.40	\$ 13.00	\$ 926.40	\$ 750.84	\$ 1,045.68	\$ 6,070.00	\$ 1,713.56	\$ 305.60	\$ 392.93	\$ 326.46	\$ 1,270.42	\$ 1,025.01	\$ 1,966.99	\$ 14,867.50	\$ 15,193.48	
0213	Northborough	\$ 1,746.90	\$ 41.70	\$ 1,788.60	\$ 484.25	\$ 769.51	\$ 6,584.81	\$ 1,759.41	\$ 84.92	\$ 411.41	\$ 441.66	\$ 942.84	\$ 989.32	\$ 2,422.85	\$ 14,890.98	\$ 15,978.85	
0266	Sharon	\$ 3,537.80	\$ 49.90	\$ 3,587.70	\$ 482.17	\$ 1,008.21	\$ 6,049.90	\$ 1,347.48	\$ 104.02	\$ 427.74	\$ 497.80	\$ 1,631.71	\$ 901.43	\$ 2,176.92	\$ 14,627.38	\$ 15,419.60	
0269	Sherborn	\$ 402.10	less than \$	\$ 403.50	\$ 1,153.95	\$ 1,286.93	\$ 7,221.49	\$ 2,088.79	\$ 129.81	\$ 243.49	\$ 395.37	\$ 937.08	\$ 1,375.75	\$ 2,600.20	\$ 17,432.86	\$ 19,134.79	
0273	Somerset	\$ 1,757.90	\$ 58.60	\$ 1,816.50	\$ 449.72	\$ 996.99	\$ 5,187.71	\$ 1,002.83	\$ 61.57	\$ 360.59	\$ 117.42	\$ 1,128.25	\$ 872.33	\$ 3,240.22	\$ 13,417.62	\$ 14,378.26	
0276	Southborough	\$ 1,301.50	\$ 25.20	\$ 1,326.70	\$ 535.02	\$ 925.62	\$ 7,109.96	\$ 2,018.07	\$ 100.80	\$ 540.54	\$ 559.98	\$ 1,102.83	\$ 1,292.48	\$ 2,503.87	\$ 16,689.17	\$ 17,763.41	
0288	Sudbury	\$ 2,811.40	\$ 39.40	\$ 2,850.80	\$ 745.89	\$ 914.82	\$ 6,054.44	\$ 1,916.91	\$ 98.09	\$ 261.33	\$ 576.63	\$ 1,188.68	\$ 1,041.00	\$ 2,063.72	\$ 14,861.49	\$ 15,258.96	
0298	Topsfield	\$ 634.70	\$ 6.00	\$ 640.70	\$ 635.36	\$ 1,171.99	\$ 5,615.86	\$ 2,041.35	\$ 123.79	\$ 571.86	\$ 176.39	\$ 1,159.85	\$ 1,399.71	\$ 2,778.53	\$ 15,674.69	\$ 15,813.00	
0315	Wayland	\$ 2,665.20	\$ 57.00	\$ 2,722.20	\$ 825.90	\$ 1,101.56	\$ 7,182.46	\$ 1,526.31	\$ 196.36	\$ 372.51	\$ 613.91	\$ 1,457.47	\$ 1,442.32	\$ 1,936.93	\$ 16,655.74	\$ 17,426.23	
0317	Wellesley	\$ 5,018.90	\$ 69.90	\$ 5,088.80	\$ 582.08	\$ 1,312.94	\$ 6,931.89	\$ 2,039.89	\$ 326.19	\$ 636.49	\$ 671.00	\$ 1,317.89	\$ 1,259.10	\$ 2,329.19	\$ 17,406.66	\$ 18,635.99	
0321	Westborough	\$ 3,663.30	\$ 44.60	\$ 3,707.90	\$ 355.39	\$ 996.54	\$ 5,925.33	\$ 1,533.95	\$ 207.89	\$ 705.22	\$ 531.63	\$ 1,004.67	\$ 1,185.19	\$ 2,003.88	\$ 14,449.69	\$ 15,554.65	
0326	Westford	\$ 5,104.10	\$ 67.60	\$ 5,171.70	\$ 342.71	\$ 734.68	\$ 5,472.87	\$ 1,062.87	\$ 227.44	\$ 313.79	\$ 427.52	\$ 1,300.04	\$ 1,077.19	\$ 1,823.90	\$ 12,783.01	\$ 13,528.04	
0330	Weston	\$ 2,157.50	\$ 33.20	\$ 2,190.70	\$ 926.05	\$ 1,768.06	\$ 8,175.95	\$ 2,084.04	\$ 297.54	\$ 811.24	\$ 684.49	\$ 1,899.27	\$ 1,797.84	\$ 4,425.74	\$ 22,870.23	\$ 23,898.66	
0344	Winchester	\$ 4,555.90	\$ 71.10	\$ 4,627.00	\$ 624.81	\$ 859.64	\$ 5,573.60	\$ 995.16	\$ 150.75	\$ 385.11	\$ 486.63	\$ 964.86	\$ 848.21	\$ 1,746.89	\$ 12,635.67	\$ 13,312.37	
0600	Acton-Boxborough	\$ 5,605.50	\$ 140.80	\$ 5,746.30	\$ 475.44	\$ 905.86	\$ 5,238.26	\$ 1,334.45	\$ 98.16	\$ 278.24	\$ 510.49	\$ 1,403.22	\$ 895.29	\$ 2,256.55	\$ 13,395.97	\$ 14,745.20	
0640	Concord-Carlisle	\$ 1,281.00	\$ 53.50	\$ 1,334.50	\$ 1,179.85	\$ 1,384.93	\$ 7,442.68	\$ 1,379.04	\$ 212.57	\$ 525.82	\$ 977.83	\$ 2,930.01	\$ 1,236.01	\$ 1,822.65	\$ 19,091.39	\$ 21,505.85	
0655	Dover-Sherborn	\$ 1,169.20	\$ 40.70	\$ 1,209.90	\$ 776.68	\$ 966.96	\$ 8,471.66	\$ 779.24	\$ 129.92	\$ 494.01	\$ 706.52	\$ 2,030.09	\$ 1,607.67	\$ 2,864.36	\$ 18,827.10	\$ 18,998.56	
0695	Lincoln-Sudbury	\$ 1,571.30	\$ 62.20	\$ 1,633.50	\$ 698.67	\$ 1,247.53	\$ 7,375.32	\$ 810.43	\$ 131.17	\$ 377.87	\$ 988.02	\$ 1,664.06	\$ 1,243.80	\$ 2,142.59	\$ 16,679.47	\$ 19,282.33	
0730	Northboro-Southbor	\$ 1,424.10	\$ 38.70	\$ 1,462.80	\$ 446.70	\$ 781.99	\$ 6,658.63	\$ 1,071.83	\$ 88.49	\$ 278.52	\$ 572.17	\$ 2,043.46	\$ 1,186.61	\$ 2,432.21	\$ 15,560.59	\$ 15,859.59	
0763	Somerset Berkley	\$ 945.80	\$ 23.50	\$ 969.30	\$ 436.52	\$ 1,367.05	\$ 5,625.71	\$ 698.91	\$ 109.55	\$ 326.23	\$ 636.95	\$ 1,627.37	\$ 1,136.10	\$ 2,284.21	\$ 14,248.59	\$ 15,520.38	



MISCELLANEOUS (UNTIMED)

11: Citizen's Comments (cont)

REQUESTOR SECTION

Date of request:

Requested by: Patty Golden

Formal Title: Citizen's Comments (cont)

Recommendations/Suggested Motion/Vote:

Background Information:

Financial impact expected:

Approximate agenda time requested:

Representative(s) expected to attend meeting:

Review:

Patty Golden	Pending
Melissa Murphy-Rodrigues	Pending
Barbara Saint Andre	Pending
Robert C. Haarde	Pending
Board of Selectmen	Pending

01/23/2018 7:30 PM



SUDBURY BOARD OF SELECTMEN
Tuesday, January 23, 2018

12

MISCELLANEOUS (UNTIMED)
12: Discuss Upcoming Agenda Items

REQUESTOR SECTION

Date of request:

Requested by: Patty Golden

Formal Title: Discuss Upcoming Agenda Items

Recommendations/Suggested Motion/Vote:

Background Information:

Financial impact expected:

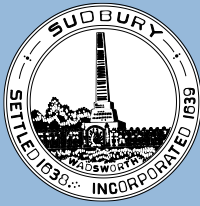
Approximate agenda time requested:

Representative(s) expected to attend meeting:

Review:

Patty Golden	Pending
Melissa Murphy-Rodrigues	Pending
Barbara Saint Andre	Pending
Robert C. Haarde	Pending
Board of Selectmen	Pending

01/23/2018 7:30 PM



SUDBURY BOARD OF SELECTMEN

Tuesday, January 23, 2018

CONSENT CALENDAR ITEM**13: Contract approval for DDC systems at Library**REQUESTOR SECTION

Date of request:

Requestor: Facilities office and Energy Committee

Formal Title: Vote to approve award of contract by the Town Manager for designing, furnishing and installing enhanced and expanded direct digital control systems for the Goodnow Library HVAC systems to reduce energy consumption.

Recommendations/Suggested Motion/Vote: Vote to approve award of contract by the Town Manager for designing, furnishing and installing enhanced and expanded direct digital control systems for the Goodnow Library HVAC systems to reduce energy consumption.

Background Information:

The Facilities Department is requesting sealed bids for the purpose of designing, furnishing and installing a complete system of enhanced and expanded direct digital control (DDC) systems for the major heating ventilation and air conditioning (HVAC) systems at the Goodnow Library, 21 Concord Road, Sudbury, MA. The library's existing DDC will remain and be incorporated into a system with expanded capabilities and enhanced software programming to reduce energy consumption. The proposed scope of work is the addition of DDC to the rooftop units, variable air volume terminal units, exhaust fans and finned tube radiation heat emitters. Energy-saving strategies including unoccupied zone temperature reset, supply duct pressure setpoint optimization, and demand ventilation will be implemented and boiler plant control will be improved. The existing economizer modes will be enhanced. All operations will be monitored by the proposed systems.

Financial impact expected:funded through 2017 Green Communities Grant

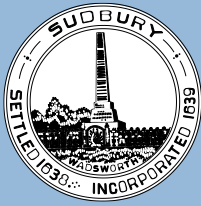
Approximate agenda time requested:

Representative(s) expected to attend meeting:

Review:

Patty Golden	Pending
Melissa Murphy-Rodrigues	Pending
Barbara Saint Andre	Pending
Robert C. Haarde	Pending
Board of Selectmen	Pending

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CONSENT CALENDAR ITEM

14: Minutes approval

REQUESTOR SECTION

Date of request:

Requested by: Patty Golden

Formal Title: Vote to approve the regular session minutes of 12/19/17.

Recommendations/Suggested Motion/Vote: Vote to approve the regular session minutes of 12/19/17.

Background Information:
attached draft

Financial impact expected:n/a

Approximate agenda time requested:

Representative(s) expected to attend meeting:

Review:

Patty Golden	Pending
Melissa Murphy-Rodrigues	Pending
Barbara Saint Andre	Pending
Robert C. Haarde	Pending
Board of Selectmen	Pending

01/23/2018 7:30 PM