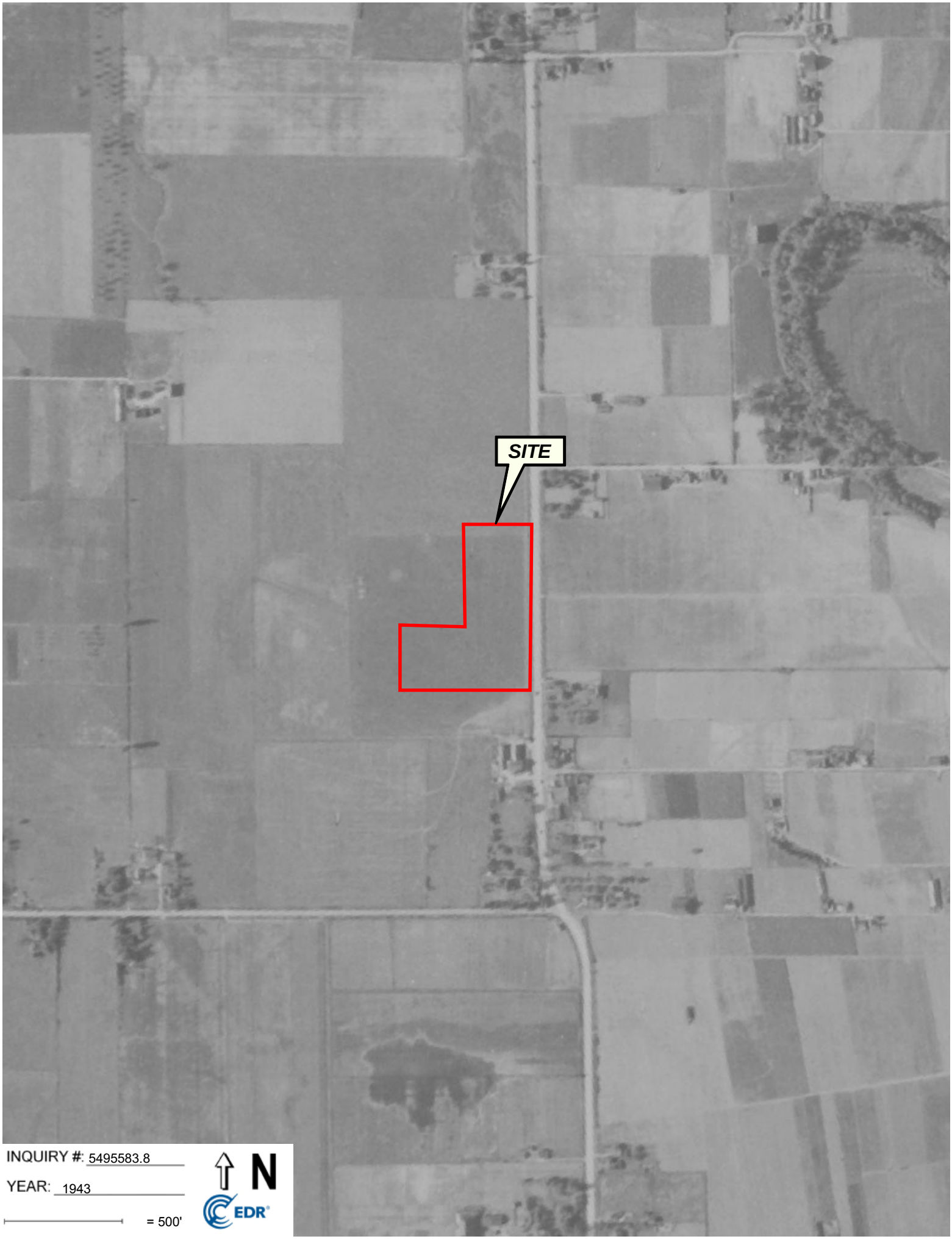
Appendix A



INQUIRY #: 5495583.8

YEAR: 1943

= 500'

N

EDR



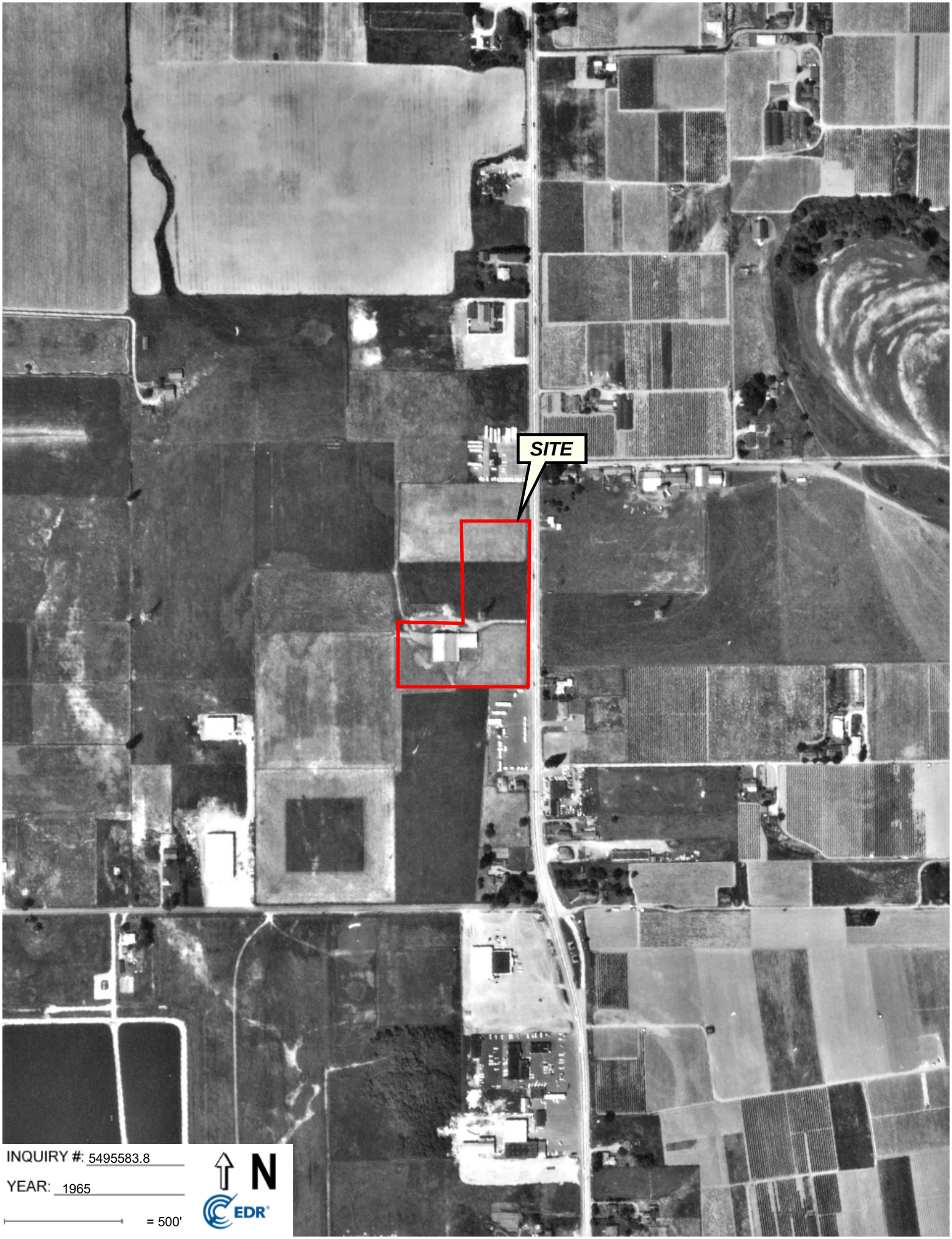
INQUIRY #: 5495583.8

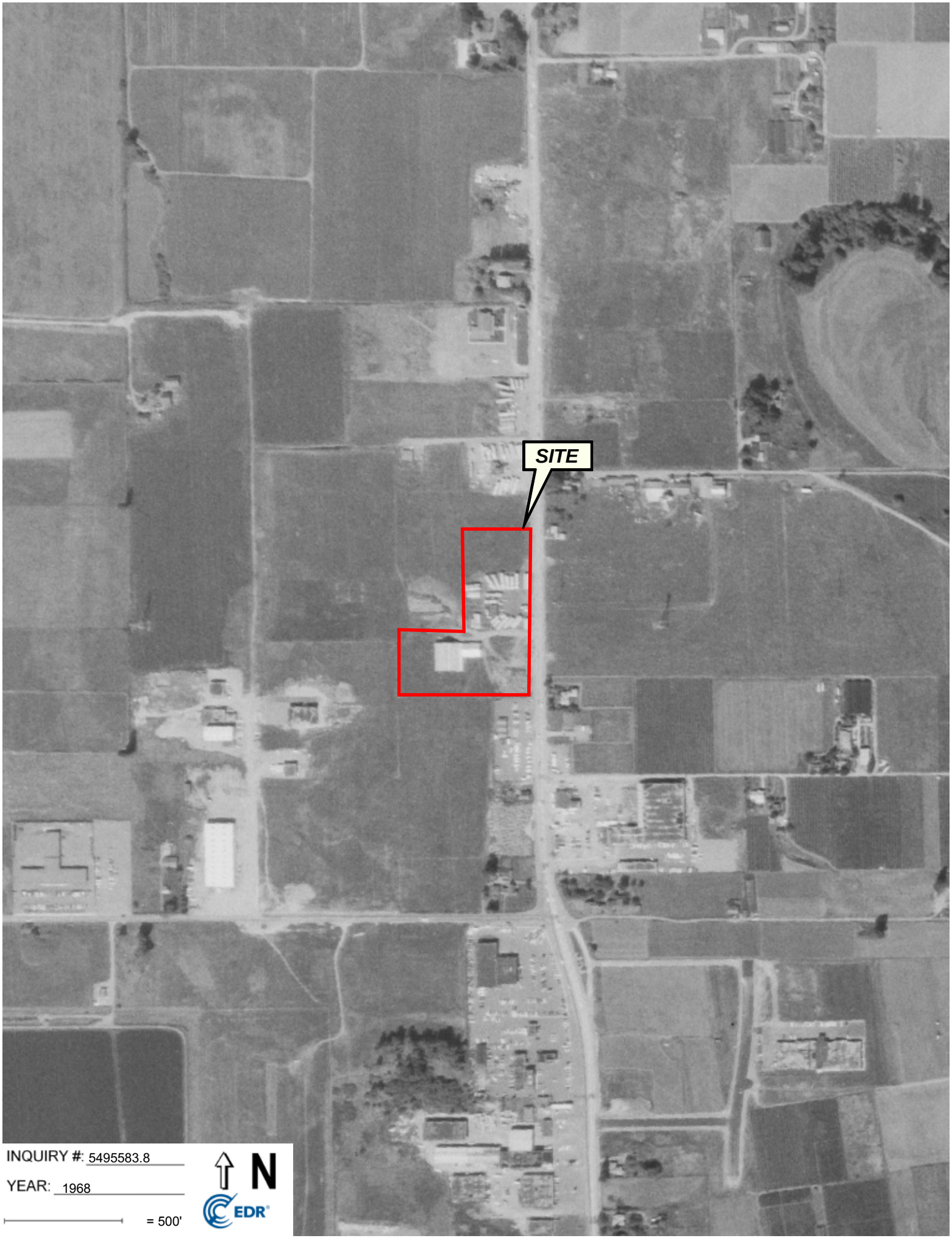
YEAR: 1957

= 500'

N

EDR


SITE
INQUIRY #: 5495583.8
YEAR: 1965
= 500'
N
EDR



INQUIRY #: 5495583.8

YEAR: 1968

= 500'

N

EDR

Photo Date: May 24, 1970

Jones, H. H. DC #39

FOLIO 21751
PERMIT NO. 5860-68
DATE 9/17/68

ADDITION TAX LOT ~~44~~ (61)
Section HW-6 Twp 21 Range 5 EWM. Block ____ Lot or (61)
Tax Lot ~~44~~ Tract ____
Address 35TH. & AUBURN WAY
Bldg #4

Fee Owner RAY L. BARRETT Architect ____ Contractor OWNER
Zoning M1 Condition of Exterior ✓ Interior ✓ Foundation ✓ Floor Plan: Good ____ Accept. ✓ Poor ____

USE
1 No. Stories
No. Stores
No. Rooms
Basement Unit Sq. Ft.
No. Offices
No. Apartmts.
1 rm. ☐ 2 rm. ☐ 3 rm.
4 rm. ☐ 5 rm. ☐ 6 rm.

TYPE OF CONSTRUCTION
✓ Frame
Metal-Prefab
Ordinary Masonry
Mill Construction
Class A Rein. Conc.
Stru. Steel and Conc.
Struct. Steel, Frame
or
QUALITY-TYPE A
Good Med. ✓ Cheap

FOUNDATION
Mud Sill ☐ Post Pier
✓ Conc. ☐ Brick
Load Hgt. ☐ Piling

BASEMENT
Full ____ % Part.
Sub-Basement
Size ____
Garage ☐ No. Cars
Floors
Plastered ☐ Pl. Bd.
No. Apartments
Service Rooms

EXTERIOR WALL CONST.
Single ☑ Double
✓ Stud Walls
Brick ____ Pil. ☐
Conc. ____ Pil. ☐
Rein. Conc. Skeleton
Str. Stl.-Frame
Pre-Fab Metal
Tilt-Up
____ Filler Wall
____ Curtain Wall

EXTERIOR FACING
✓ Siding
Stucco ____ Shakes
Marblecrete
✓ Brick ☑ Veneer TRIM
Conc. ☐ Conc. Blk.

FLOOR CONSTRUCTION
Joist ____ x ____ x ____ O.C.
Mill ____ Car Deck
✓ R-Conc. ____ Elev.
Steel ____ GLB.
or

ROOF COVERING
✓ Blt.-Up ✓ Tar & Gr.
Comp. ____ Metal
or

ROOF CONSTRUCTION
✓ Frame-Joist ____
✓ Mill-Deck ____
Rein. Conc. ____ GLB
Steel Fr. ____ Metal Deck
Trusses ____ Span
Wood ____ Steel

FLOOR FINISHES
Fir ☐ Maple
Oak ☐ 2x6TG
Lino ☐ 3x6TG
Cement ☐ Lgtwgt. Conc.
Terrazzo
Asphalt Tile ☐ Vinyl Tile
or TERR. SALES AREA ONLY

☐ Tile ☐ Lino ☐ Form.
Bath Floor
Bath Walls
Tub Recess
Drain Bds.
Vanities

PLUMBING
No. Fixtures
2 Toilets ____ Urinals
Tubs Leg. or Pem.
2 Basins ____ Dr. Ftns.
Sinks
Washers ____ Dryers
Showers (tub) (stall)
1 H.W. Tanks ____ Ldy. Trays
D-Washers ____ Disposals
Sprinkler Sys.

Date Built 1969 Date Add. Built ____ ✓ Finished ☐ Unfinished ☐ Remodeled
Effective Age ____ Years Future Life ____ Years
Dep. for Cond. ____ Dep for Ob. ____ Dep. for Es. ____ Total ____

FACT



HEATING
✓ Elec. ____ Oil ____ Gas
H.W. ____ St. ____ H.A.
B.Bd. ____ Suspended
FHA ____ Pipeless
A. Cond. ✓ Space Wall Unit
Comb. Unit ____ Custom
Refrig. ____ Convector
Heat Pump ____ Fireplace

YEAR	ASSESSED VALUE
1970	5,950 EH-69
71	1,900

MISC. TANKS, Etc.
NONE HOISTS: Elec. Hydr.
3 PUMP ISLANDS
2-4 PUMP-1 3 PUMP
4 LIGHT STANDARDS
3 A/W

ELEVATORS
Pass. ✓ Frght.
Auto. ____ Elec.
Man. ____ Hydr.
Doors-Auto ____ Man. ____
✓ Escalators
____ Stops ____ Speed
Cap'y. ____

DOCKS AND PIERS
Hvy. ____ Med. ____ Lgt.
Untrtd. Pile Tmbr.
Conc. Piles & Bms
Trtd. Pile Tmbr.
Paved
Dolphins
Deck

WIRING
Knob & Tube
C Flex. Cable
O Conduit
D Pwr. Wiring
✓ Range Wiring
____ Outlets

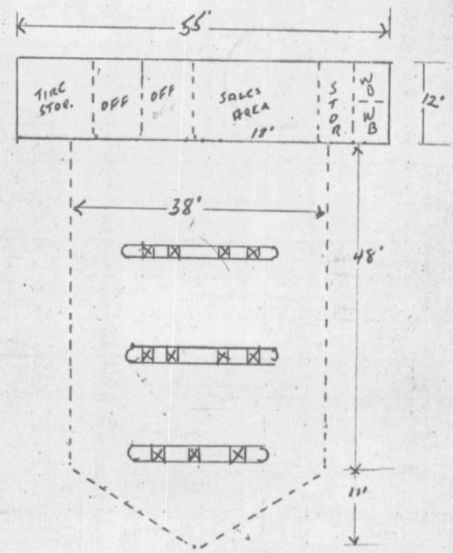
INTERIOR WALLS & CEILING
Stud Wood Metal
Plaster ✓ DryWall
Acc. Tile Celotex
✓ Ceiled Plywood
Solid Block
Sound Proofed Lamin.
Finished Unfinished
✓ Painted Varnished

INSULATION
✓ Exter. ____ Partitions
Roof ____ Floor

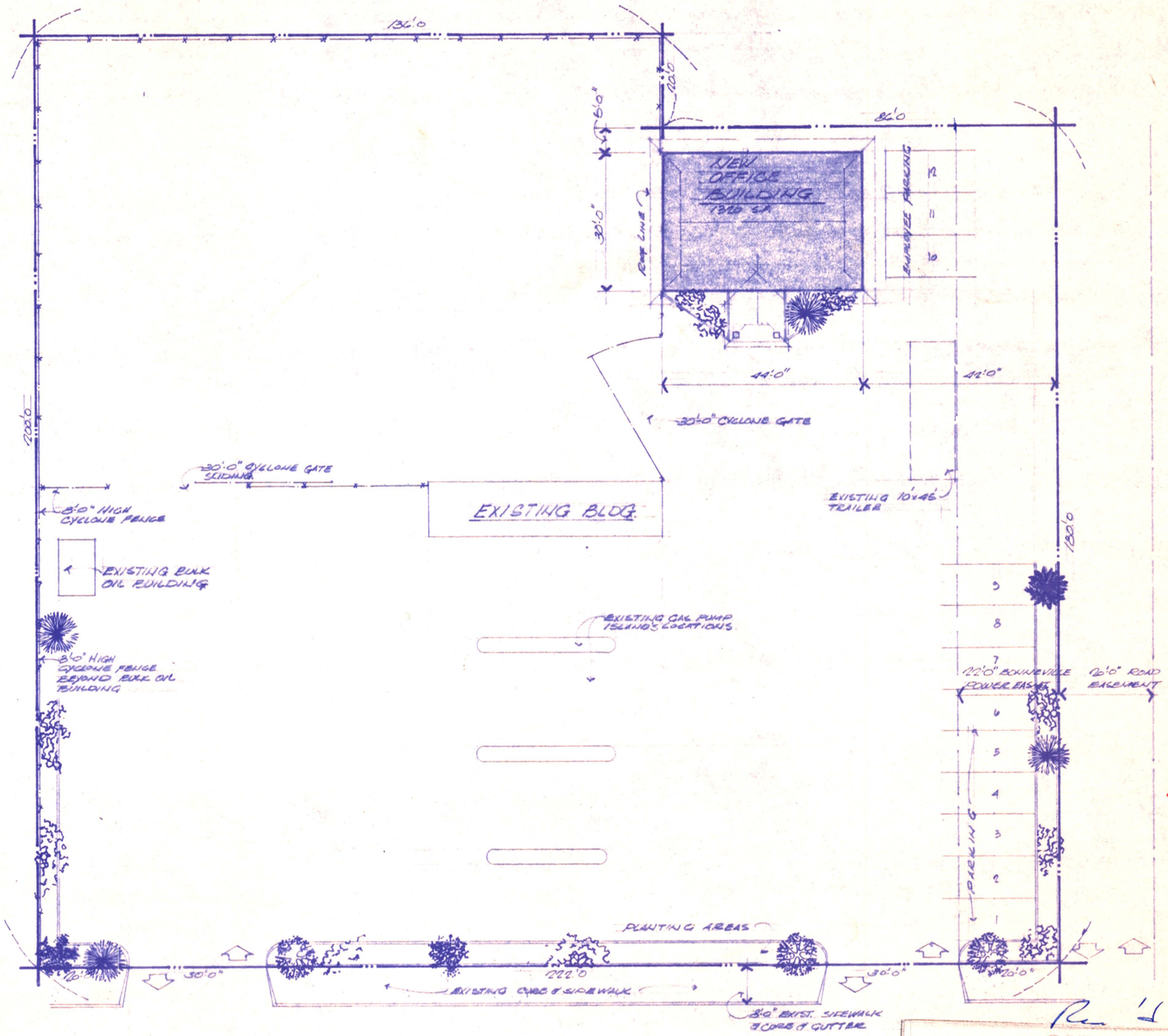
INTERIOR TRIM
✓ Fir ____ Birch
Mah. ____ Oak
Metal
✓ Wood ✓ Metal Doors
Wood ✓ Metal Sash
✓ Stained ____ Varnish
✓ Painted ____ Unfin.

SB	C. Hgt.
B	
1	9
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	

GROUND FLOOR AREA 660
TOTAL FLOOR AREA



2OM 11/63



NORTH

LANDSCAPE LEDGEND

- JUNIPERUS EXCELSA STRICTA
- JUNIPERUS CHINENSIS ANBSI
- PINUS SYLVESTRIS
- JUNIPERUS TAMARISCIFOLIA
- JUNIPERUS VIRGINIANA

SITE PLAN

SCALE: 1" = 20'-0"

Exempt From landscaping - Bldg Under sqft prior to Oct 1, 1976
See Sec 003 4/p. 4

LEGAL DESCRIPTION:
ATTACHED

Rev'd 11/8/76 CD

CITY OF AUBURN
PLAN CHECK RECORD

DEPT.	APPROV.	NOT APPROV.	DATE	BY	COMMENTS
BLDG.	✓		11/8/76	CD	As noted
FIRE DEPT.	✓		11-10-76	EXH	See below
PLANNING	✓		11/8/76	BD	
SAN. SEWER					
STORM	N/A		11/8/76	JRC	
STREET	NA		11/8/76	JRC	Ave. & Pond and Storm lines is
WATER					

COMMENTS
3317 AW N.

1. Provide fire Extinguishers ILLEGIBLE EXH

designed exclusively for
RAY BARRETT ENTERPRISES

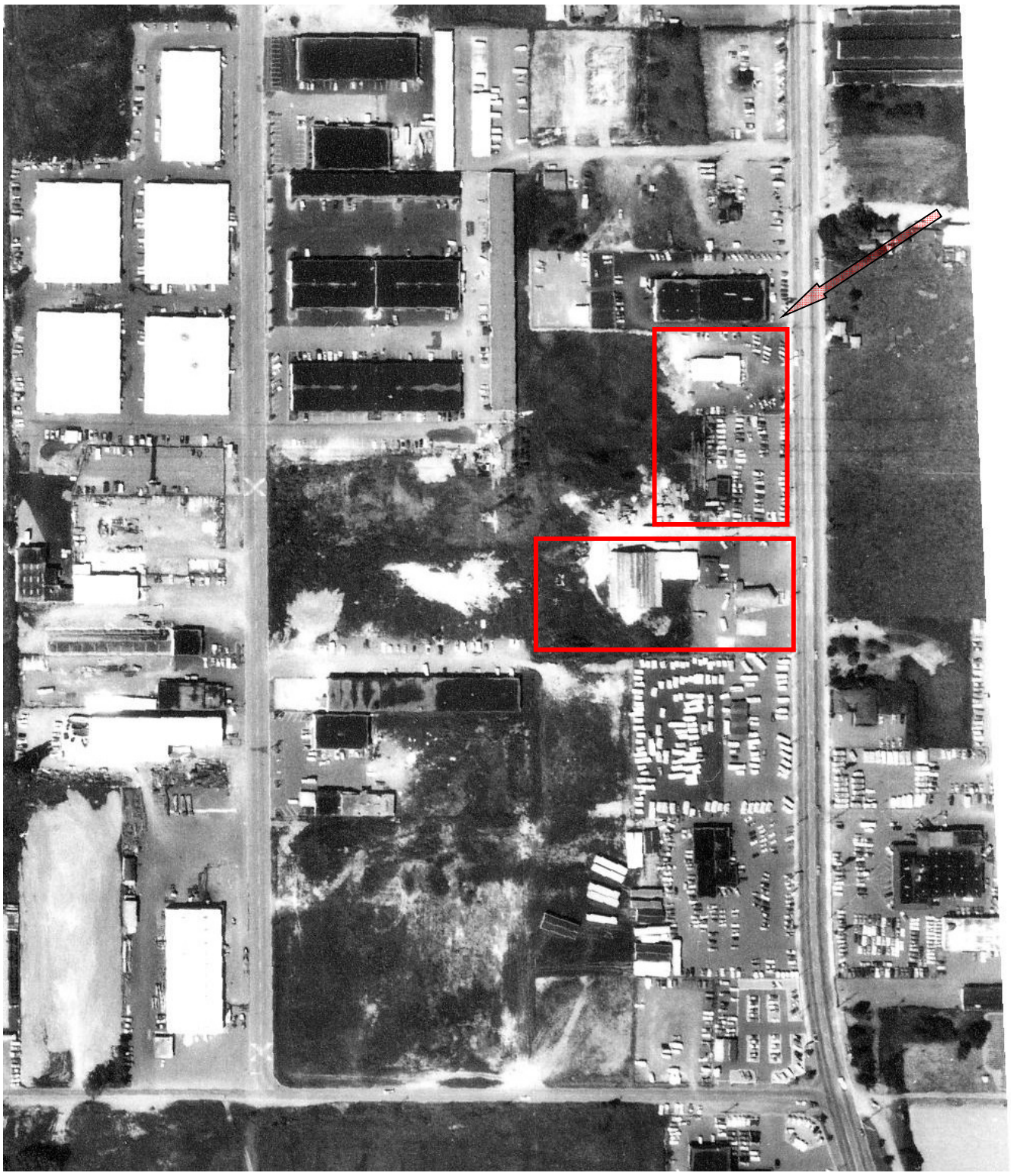
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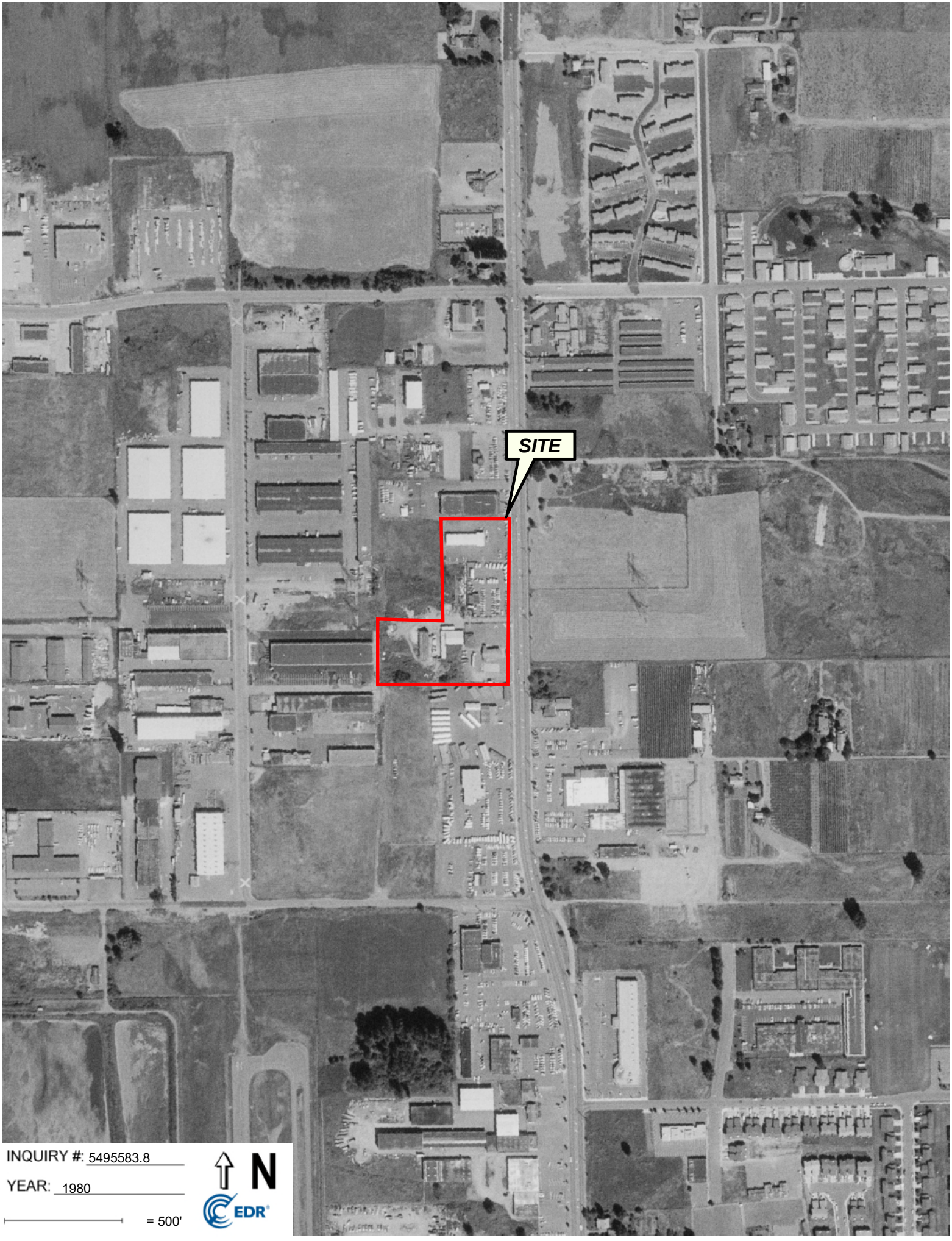
A I ZANONI & ASSOCIATES
B D 508 WEST MAIN - AUBURN
building designers
ROBERT ZANONI Auburn 939-1111
KENNETH CLEVENGER Puyallup 845-1430
REGISTERED PROFESSIONAL BUILDING DESIGNERS

Date: Nov. 5th 1976
Drawn: Calkins, M.
Sq. Ft.:
Job No. 76/11

SHEET No.
1 of 5



1978



INQUIRY #: 5495583.8

YEAR: 1980

= 500'

N

EDR



Photo Date: August 1, 1981

ASSESSOR'S FORM NO. 250-2 FOLIO NO 21751 ASSESSOR'S ACCT NO 000400-0061

GRADE		USE CODE		STORY STATISTICS	STORIES	1-					
YEAR BUILT		CONDITION			PERIMETER						
EFFECTIVE AGE		NO. OF UNITS			SQUARE FEET						

STORY HGT.	ADDITIONS		FLAT ITEMS		BUILDING CALCULATIONS						
BSMT.	SF @		PLUMBING		STORIES	1-					
1 ST	SF @				BASE						
2 ND	SF @				HGT. FAC.						
3 RD	SF @				AREA FAC.						
4 TH	SF @				STY. FAC.						
5 TH	SF @				ADJ. FAC.						
6 TH	SF @				ADJ. BASE						
7 TH	SF @				BSMT.						
8 TH	SF @				FLOOR						
9 TH	SF @				ROOF						
10 TH	SF @				CEIL						
11 TH	SF @				PART.						
					HEAT						
					AIR COND.						
					LIGHTS						
					SPRINK.						
					TOTAL						
					STORIES						
						SF @					
						SF @					
						SF @					
						SF @					
	TOTAL		TOTAL			SF @					

	AREA OR QUANTITY	UNIT COST	REPLACE COST	EFF. AGE	DEPR. NET	TOTAL VALUE
TOTAL ACCESSORY BUILDINGS & OTHER IMPROVEMENTS						$

FLAT ITEMS	
SUB-TOTAL	
ADDITIONS	
TOTAL	
COST FACTOR	
TOTAL REPLACEMENT COST	$
PHYSICAL DEPRECIATION (NET)	X
TOTAL PHYSICAL VALUE	$
ECON. OR FUNCT OBSOL. (NET)	X
FINAL APPRAISED VALUE	$
PERCENT COMPLETE (NET)	X
PARTIAL VALUE	$

OFFICE - BLDG # 2 ONLY

INCOME APPROACH	ACTUAL	ECONOMIC
ANNUAL POTENTIAL GROSS		7920
LESS VAC. & CREDIT LOSS		x.92
ANNUAL EFFECTIVE GROSS		7286
LESS EXPENSES		x.85
ANNUAL NET INCOME		6193

____ + ____ + ____ = ____
INT. RATE TAX RATE LAND RATE

LESS LAND INCOME:
10,600 x .08 = -848
LAND VALUE LAND RATE
NET INCOME TO BUILDING 5345

÷ BLDG RATE:
7 + 1 + 3 = ÷11%
INT. RATE TAX RATE RECAPTURE RATE BUILDING RATE

BUILDING VALUE 48,592
PERSONAL PROP VALUE
LAND VALUE
INDIC TOTAL PROPERTY VALUE

INCOME APPROACH	# 1	# 2
3. COST APPROACH OR RCN		
4. MKT # 1: ____ (GRM) x ____ (GROSS) =		
5. MKT # 2: ____ (NO. UNITS) x ____ ($ PER UNIT) =		
6. MKT # 3: ____ (AREA) x ____ ($ PER SQ. FT.) =		

SELECTED VALUE: LAND 87,300
APPRAISER STH BLD'G 90,200
DATE 5/15/84 TOTAL 177,500

COMMENTS

SELF-SERVE S.STA + OFFICE BLDG

BLDG # 1 : S.STA / FRAME-LC / BLT '68
GBA = 660 ϕ
2 4-PUMP ISLANDS - CANOPY 2033 ϕ
PREV IMP AV TOTALS = 39,200 (BEFORE FACTOR)
MS UPDATE x 1.063 = 41,600

BLDG # 2 : OFFICE BLDG O-AV / BLT '77
GBA = 1320 ϕ
EST ECON RENT @ .50/ϕ = 660/M
EST LAND ATTRIB @ 4 x GBA ⇒ 5280 ϕ @ 2.00/ϕ

'84 LAND AV = 43,650 ϕ @ 2.00/ϕ = 87,300

SALES

	PARCEL	E #	AMOUNT	DATE	LOCATION	NOTES
SUBJECT						
SUBJECT						
COMP						
COMP						

C/I PROPERTY VALUE SUMMARY RECORD

ACCOUNT NO. : 000400-0061-0

LOG/DATE : 460 05/10/84
STATUS :CURRENT 05/10/84
BLDG.CNT : 01
COMP.TYPE : 0
CNDO/TWN H:

FOLIO NO. : 21751- -
SEC-TWN-RNG : NW-06-21-05
AREA : 460
LEVY CODE : 0140
TAX STATUS : TAXABLE

* ACTION CODE
__1. COST COMP WITHOUT COMP SHEET
__2. COST COMP WITH COMP SHEET
__3. FINAL VALUE/DATA UPDATE
__4. REVIEW WITHOUT VALUE CHANGE
__5. REVIEW WITH VALUE CHANGE
__6. NO VALUE CHANGE,MOVE TO STATIC

* 150 * REVIEW STATUS

MAINTENANCE REVALUE,POST TO __ ROLL

* 130 * VALUE SUMMARY CONTROL VAL 00018470O SEQ 01 ___

	LAND	IMP	RLYR				
ROLL	75400	109300	84	12/27/83	CO#:	C/I REVALUE	
			TOTAL	DATE	TYPE	APR	RVR
LAST	75400	109300	184700	03/10/82	S	999	000
APR	87,300	90,200	177,500	5/15/84	S	37H	
RVR				__/__/__	__		

NEW CONSTRUCTION _

* 335 * BUILDING PERMIT ACTIVITY

	BLDG:	TYPE	PERMIT DATE	VALUE	% COMPLETE	CALL-BACK
ADD	___	___	___/___/___	_____	_____ %	___/___

* SALES ACTIVITY

DATE	AFF.#	SALE PRICE	INST.	REASON	VERIFICATION	CLASS
10/30/81	E 658559	308,981	DEED	TRUST	11-CORP AFF/REL	COM. IMP.

* 504 * BUILDING VALUE SUMMARY

						VALUE	METHOD
BLDG DESCRIPTION						$_____	___
01 SERVICE STATION							
ACT COST :		EFF YR: 68	___	OTH RCN :		$_____	
SOURCE :		COND : 00	___%	MARKET :		$_____	
ACT TREND :		OBSOL : 50	___%	INCOME :		$_____	
		COMPL : 00	___%	OTH RCNLD:		$_____	
CC RCN :	$20463			CC-RCNLD :	$8492		
BLDG DESCRIPTION						$_____	___
02 OFFICE BLDG							
ACT COST :		EFF YR: 77	___	OTH RCN :		$_____	
SOURCE :		COND : 00	___%	MARKET :		$_____	
ACT TREND :		OBSOL : 00	___%	INCOME :		$_____	
		COMPL : 00	___%	OTH RCNLD:		$_____	
CC RCN :				CC-RCNLD :			

* 504 * ACCESSORY IMPROVEMENT VALUE SUMMARY

ENT.	TYPE	ACT.COST	SR	RCN	EFYR	COND	RCNLD	VALUE
	70-SERV.STA.ACCSYS							
7001	5-ISLAND,4 PUMP			$942	0	70%	$659	
					___	___%		$_____
7002	7-DSPNSER PIPING			$470	0	70%	$329	
					___	___%		$_____
7003	6-PUMP PIPING			$3136	0	70%	$2195	
					___	___%		$_____

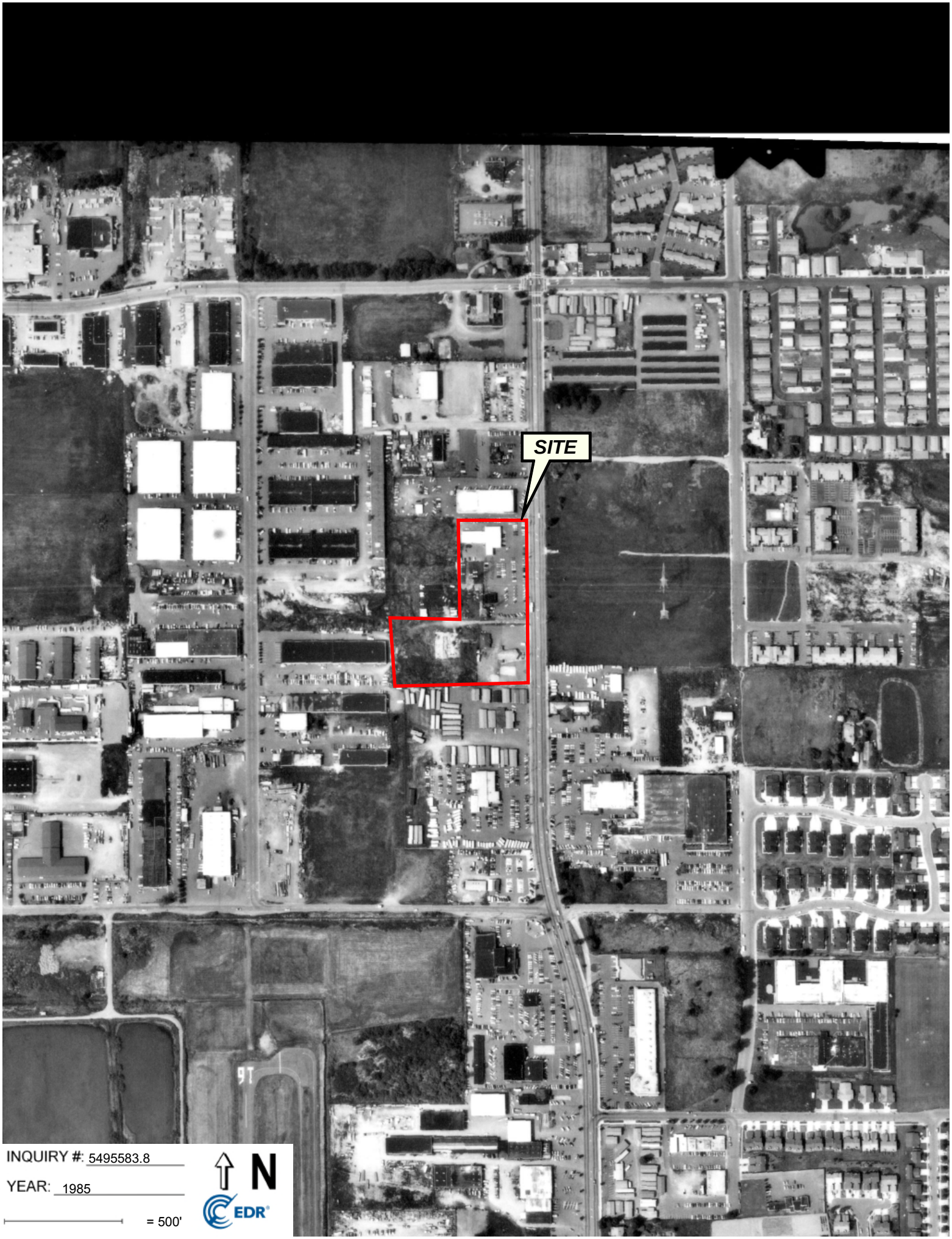

SITE
INQUIRY #: 5495583.8
YEAR: 1985
= 500'
N
EDR



Photo Date: August 14, 1985

3317 Auburn Way N Titò Poempke

DATE	PMT.NO.	TYPE	FINAL	INSPTR.
8/19-23/85	16590	DEMO COM BUILDING		

Building Surcharge $1.50

CITY OF AUBURN - BUILDING PERMIT

SEE UNIFORM BUILDING CODE FOR EXPIRATION LIMITS

A/C	PLAN CHECK	PERMIT	TOTAL FEES	RECEIPT NO.	DATE	PERMIT NO.
2980	-----	$10.00	$10.00	70976	8-23	16590

OWNER Tito Roempke ADDRESS 3401 Auburn Way N Auburn 854 9260

CONTRACTOR same ADDRESS

CONTR'S. REG. NO. SALES TAX NO. C 600 118 154 IND. INS. ACC'T. NO.

ADDRESS (SITE) 3317 Auburn Way N

LEGAL DESCRIPTION BAAP on the W mgl ln of SH #5 1230.05' S of N ln of S ½ of the Harvey] H Jones DC #39 6-21-5 KC WA; th S 89-08-45 W 181.0'; th S 0-57-30 E 79'; th S 0=57-30- E 143'; th N 89-08-45 E to W mgl l of PSH #5; th N alg the W mgnl ln of sd hwy to a pt of beg; EXC the E 5' thof as conv to City of Auburn by deed under AFN 6148985; EXC easements and r/w to U.S.A. under AFN 3251216 & 4970569; EXC that por conv to St of WA under AFN 5823137.

☐ ERECT ☐ REPAIR ☒ RAZE ☐ ALTER ☐ MOVE ☐ ADDITION

ZONING	PLANS FILED	USE OR OCCUPANCY	NUMBER OF REQUIRED OFF STREET PARKING SPACES
	YES ( ) NO ( )	Demo service station and underground tanks	

TYPE OF CONSTRUCTION

☐ I, INCOMBUSTIBLE ☐ II, FIRE RESISTANCE ☐ III, HEAVY TIMBER ☐ IV, INCOMBUSTIBLE FRAME ☐ V, WOOD FRAME

1ST FLOOR AREA	2ND FLOOR AREA	BASEMENT AREA	GARAGE / CARPORT AREA	DECK AREA	COVERED PATIO AREA	TOTAL AREA	

SIDEWALK AS REQUIRED BY ORD. _____, _____ LIN. FT. _____ ESTIMATED VALUE $500.

PLOT PLAN IS REQUIRED - SHOW SET BACKS, DRIVEWAY LOCATION, SIDEWALK, ETC.

N W E S

NOTE: SANITARY SEWER TO BE PLUGGED AT PROPERTY LINE WITH CONCRETE AND INSPECTED BEFORE IT IS COVERED. ANY EXCAVATION LEFT BY THE DEMO IS TO BE FILLED TO THE LEVEL OF SURROUNDING GRADE WITH APPROVED MATERIAL: DEMO DEBRIS IS NOT APPROVED FOR FILL. INSPECTION REQUIRED UPON COMPLETION.

Check with Auburn Fire Marshall
For Reqm'ts for Removal of
underground tanks - 931-3010
Tanks to be removed J Martin

CITY OF AUBURN

ORDINANCE No. 2283

Requires Electrical Services Installed Underground.

I CERTIFY THAT THE INFORMATION FURNISHED BY ME IS TRUE AND CORRECT, AND THAT THE APPLICABLE CITY OF AUBURN REQUIREMENTS WILL BE MET.

OWNER/ AGENT Laurence W. Martin

INSPECTION PHONE : 931-3020
PERMITS ARE NON-TRANSFERABLE

BUILDING OFFICIAL, CITY OF AUBURN

NOTE: SEPARATE PERMITS REQUIRED FOR SIDE SEWER & SEPTIC TANK INSTALLATIONS, SIDEWALKS, PLUMBING, MECHANICAL AND STORM LINE

A FINAL INSPECTION IS REQUIRED BEFORE USE OR OCCUPANCY

Building Surchargd $1
Energy Surcharge $10.

CITY OF AUBURN - BUILDING PERMIT

SEE UNIFORM BUILDING CODE FOR EXPIRATION LIMITS

A/C	PLAN CHECK	PERMIT	TOTAL FEES	RECEIPT NR.	DATE	PERMIT NR.
29	TR 72290 $482.95	$743.00	$1225.95	73351	12.20.85	16831

OWNER Tito Roempke ADDRESS 3401 Auburn Way N Auburn

CONTRACTOR Kaufman Bros Const ADDRESS 7711 Martin Way Olympia

CONTR'S. REG. Nº. KAUFMBC278 L2 SALES TAX Nº. C 342 009 131 00 IND. INS. ACC'T. Nº. 207 171

ADDRESS (SITE) 3317 ~~3401~~ Auburn Way N

LEGAL DESCRIPTION BAAP on the W mgl ln of SH#5 1230.05' S of N ln of S ½ of HH Jones DC #39 in 6-21-5 in KC, WA; th S 89 08 45 W 181.0'; th S 0 57 30 E 79'; th S 89 08 45 W 19'; th S 0 57 30 E 143'; th N 89 08 45 E to W mgl ln of PSH #5; th N alg the W mgl ln of sd hwy to pob; EXC the E 5' thof as conv to City of Auburn by deed recd under AFN 6148985; EXC easements and r/w to USA recd under AFN 3251216 & 4970569; EXC that por conv to St. of WA under AFN 5923137.

~~000400 0038 02 XX 000400 0038 02~~ 000400 0061 02

[X] ERECT [ ] REPAIR [ ] RAZE [ ] ALTER [ ] MOVE [ ] ADDITION

ZONING	PLANS FILED	USE OR OCCUPANCY	NUMBER OF REQUIRED OFF STREET PARKING SPACES
M 1	YES ( ) XX NO ( )	B d Auto Dealership	

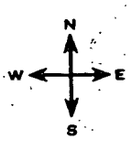
TYPE OF CONSTRUCTION II-N

[ ] I, INCOMBUSTIBLE [ ] II, FIRE RESISTANCE [ ] III, HEAVY TIMBER [ ] IV, INCOMBUSTIBLE FRAME [ ] V, WOOD FRAME

1ST FLOOR AREA	2ND FLOOR AREA	BASEMENT AREA	GARAGE / CARPORT AREA	DECK AREA	COVERED PATIO AREA	TOTAL AREA
6700	(2000 showroom, 800 canopy drive-thru, 3900 repair garage)					

SIDEWALK AS REQUIRED BY ORD. 2002, 222 LIN. FT. ESTIMATED VALUE 223,455.

PLOT PLAN IS REQUIRED - SHOW SET BACKS, DRIVEWAY LOCATION, SIDEWALK, ETC.



CITY OF AUBURN

ORDINANCE No. 2283

Requires Electrical Services Installed Underground.

I CERTIFY THAT THE INFORMATION FURNISHED BY ME IS TRUE AND CORRECT, AND THAT THE APPLICABLE CITY OF AUBURN REQUIREMENTS WILL BE MET.

OWNER/ AGENT James R Kaufman

INSPECTION PHONE : 931-3020
PERMITS ARE NON-TRANSFERABLE

BUILDING OFFICIAL, CITY OF AUBURN

NOTE: SEPARATE PERMITS REQUIRED FOR SIDE SEWER & SEPTIC TANK INSTALLATIONS, SIDEWALKS, PLUMBING, MECHANICAL AND STORM LINE.

A FINAL INSPECTION IS REQUIRED BEFORE USE OR OCCUPANCY

BUILDING INSPECTION RECORD

ADDRESS 3317 Auburn Way N
Roempke/Kaufman Bros

BUILDING PERMIT NO 16831

DATE	ZONING	TYPE OF CONST.	VALUATION
12/20/85	M 1	II-N	$223,455

GROUP & DESCRIPTION OF CONST.
B 2 Auto dealership

FND. 1-10-86 Ch	PLUMBING PERMIT NO. & DATE
FRM. INSUL. 4-12-86 Ch	GROUND WORK 2-2-86 Ch ROUGH IN 4-12-86
FINAL 5-10-86 Ch	FINAL 5-20-86

LEGAL DESC: 000400 0061 02

TYPE OF PERMIT	NO.	ISSUED	INSPECTED	INSPECTOR
SW/DW (or DELAY)				
MECHANICAL	86-178	3/27/86		
SAN SEWER				
SEPTIC CONST.	9667	1-15-86	1/17/86	DOT
STORM LINE	9667	"	1-29-84	DOT
WATER				
OTHER	Hydrant 9648	1-3-86	OK	LEO
OTHER				

CERTIFICATE OF OCCUPANCY ISSUED DATE 12/11/86

COMMENTS:

BOB ROEGNER, MAYOR
PAT DUGAN, PLANNING DIRECTOR

PLANNING AND COMMUNITY DEVELOPMENT DEPT.
25 WEST MAIN, AUBURN, WA 98001
(206) 931-3090

ENVIRONMENTAL CHECKLIST

Purpose of Checklist:

The State Environmental Policy Act (SEPA), Chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply". Complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of Checklist for Nonproject Proposals:

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply". IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer," and "affected geographic area," respectively.

A. BACKGROUND:

1. Name of proposed project, if applicable: New Car Dealership

2. Name of Applicant: Auburn Valley Isuzu (Tito Roempk'e)

3. Address and phone number of applicant and contact person:

Applicant:	Agent (if applicable):
Tito Roempk'e	
3401 Auburn Way No.	
Auburn, Wa. 98002	

APPLICATION NO.: EV- - APPLICATION FEE: $50.00

DATE FILED: _____ T.R. RECEIPT: _____

4. Date checklist prepared: 10/11/85

5. Agency requesting checklist: City of Auburn, Washington

6. Proposed timing or schedule (including phasing, if applicable):
   Building to begin A.S.A.P.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.
   No

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.
   No

10. List any government approvals or permits that will be needed for your proposal, if known.
    None

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page.
    We propose to construct a steel building on the cleared lot to house a new car dealership- sales and service

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.
    3317 Auburn Way no

    Jones H H-DC #39 POR of D C BEG on W MGN of PSH #5 as estab at PT 1230.05 Ft S of N LN of S ½ of DC th S 89-08-45 W 181 Ft.

ROEMPKE 000580

TO BE COMPLETED BY APPLICANT

B. ENVIRONMENTAL ELEMENTS:

1. Earth:

A. General description of the site (circle one): Flat, rolling, hilly, steep slopes, mountainous, other FLAT .

B. What is the steepest slope on the site (approximate percent slope)?

none

C. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specifiy them and note any prime farmland.

gravel-blacktop

D. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

no

E. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

none

F. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

no

G. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

80%

H. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

none

2. Air:

A. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

none

B. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

none

ROEMPKE 000581

C. Proposed measures to reduce or control emissions or other impacts to air, if any:

none

3. Water:

A. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year round and seasonal streams, saltwater, lakes, ponds, wetlands): If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

none

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

no

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

none

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

no

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.
no

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

none

B. Ground:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

none

ROEMPKE 000582

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing any toxic chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

city sewer system already installed- aprox. 12 employees

C. Water Runoff(including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

storm water runoff to be collected by city street storm sewers

2) Could waste materials enter ground or surface waters? If so, generally describe.

no

D. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

none

4. Plants:

A. Check or circle types of vegetation found on the site:

_____ deciduous tree: alder, maple, aspen, other.
_____ evergreen tree: fir, cedar, pine, other.
_____ shrubs.
_____ grass.
_____ pasture.
_____ crop or grain.
_____ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other.
_____ water plants: water lily, eelgrass, milfoil, other.
__X__ other types of vegetation.

B. What kind and amount of vegetation will be removed or altered?

blackberries

C. List threatened or endangered species known to be on or near the site.

none

D. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

low growing evergreens, juniper tams and etc.

ROEMPKE 000583

5. Animals:

A. Circle any birds and animals which have been observed on or near the site or are known to be on or near the site: none

Birds: hawk, heron, eagle, songbirds, other:.....
Mammals: deer, bear, elk, beaver, other:.....
Fish: bass, salmon, trout, herring, shellfish, other:.....

none

B. List any threatened or endangered species known to be on or near the site.

none

C. Is the site part of a migration route? If so, explain.

no

D. Proposed measures to preserve or enhance wildlife, if any:

none

6. Energy and Natural Resources:

A. What kinds of energy (electric, natural gas, oil, wood stove, solar) wil be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

electric & gas heating and lites

B. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

no

C. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

insulation over and above code, maximum usage of glass in showroom to conduct sun into building.

7. Environmental Health:

A. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so,. describe.

none

ROEMPKE 000584

1) Describe special emergency services that might be required.

none

2) Proposed measures to reduce or control environmental health hazards, if any:

none

B. Noise:

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

none

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

construction- 8am-6pm

3) Proposed measures to reduce or control noise impact, if any:

none

8. Land and Shoreline Use:

A. What is the current use of the site and adjacent properties?

previous business-gas station

B. Has the site been used for agriculture? If so, describe.

no

C. Describe any structures on the site.

brick -3 office building

D. Will any structures be demolished? If so, what?

station already removed

E. What is the current zoning classification of the site?

commercial

F. What it the current comprehensive plan designation of the site?

auto dealership

ROEMPKE 000585

G. If applicable, what is the current shoreline master program designation of the site?

none

H. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

no

I. Approximately how many people would reside or work in the completed project? 12

J. Approximately how many people would the completed project displace?

none

K. Proposed measures to avoid or reduce displacement impacts, if any:

L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

none

9. Housing:

A. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

none

B. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

NA

C. Proposed measures to reduce or control housing impacts, if any:

NA

10. Aesthetics:

A. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed? 16 feet tall-steel exterior

B. What views in the immediate vicinity would be altered or obstructed? none

C. Proposed measures to reduce or control aesthetic impacts, if any:

none

ROEMPKE 000586

11. Light and Glare:

A. What type of light or glare will the proposal produce? What time of day would it mainly occur?

none

B. Could light or glare from the finished project be a safety hazard or interfere with views?

no

C. What existing off-site sources of light or glare may affect your proposal? none

D. Proposed measures to reduce or control light and glare impacts, if any:

shaded glass

12. Recreation:

A. What designated and informal recreational opportunities are in the immediate vicinity? none

B. Would the proposed project displace any existing recreational uses? If so, describe. no

C. Proposed measures to reduce or control impacts on recreation, including recreation, including recreation opportunities to be provided by the project or applicant, if any:

no

13. Historic and Cultural Preservation:

A. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

no

B. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

none

C. Proposed measures to reduce or control impacts, if any:

NA

ROEMPKE 000587

14. Transportation:

A. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

Auburn Way no

B. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

yes

C. How many parking spaces would the completed project have? How many would the project eliminate?

parking for aprox 100 autos, elimination-none

D. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

no

E. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

water

F. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

peak volumes 8am-9am----------4pm-5pm-

G. Proposed measures to reduce or control transportation impacts, if any:

none

15. Public Services:

A. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

no

ROEMPKE 000588

B. Proposed measures to reduce or control direct impact on public services, if any.

none

16. Utilities:

A. Circle utilities currently available at the site: (electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

B. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

all of the circled above

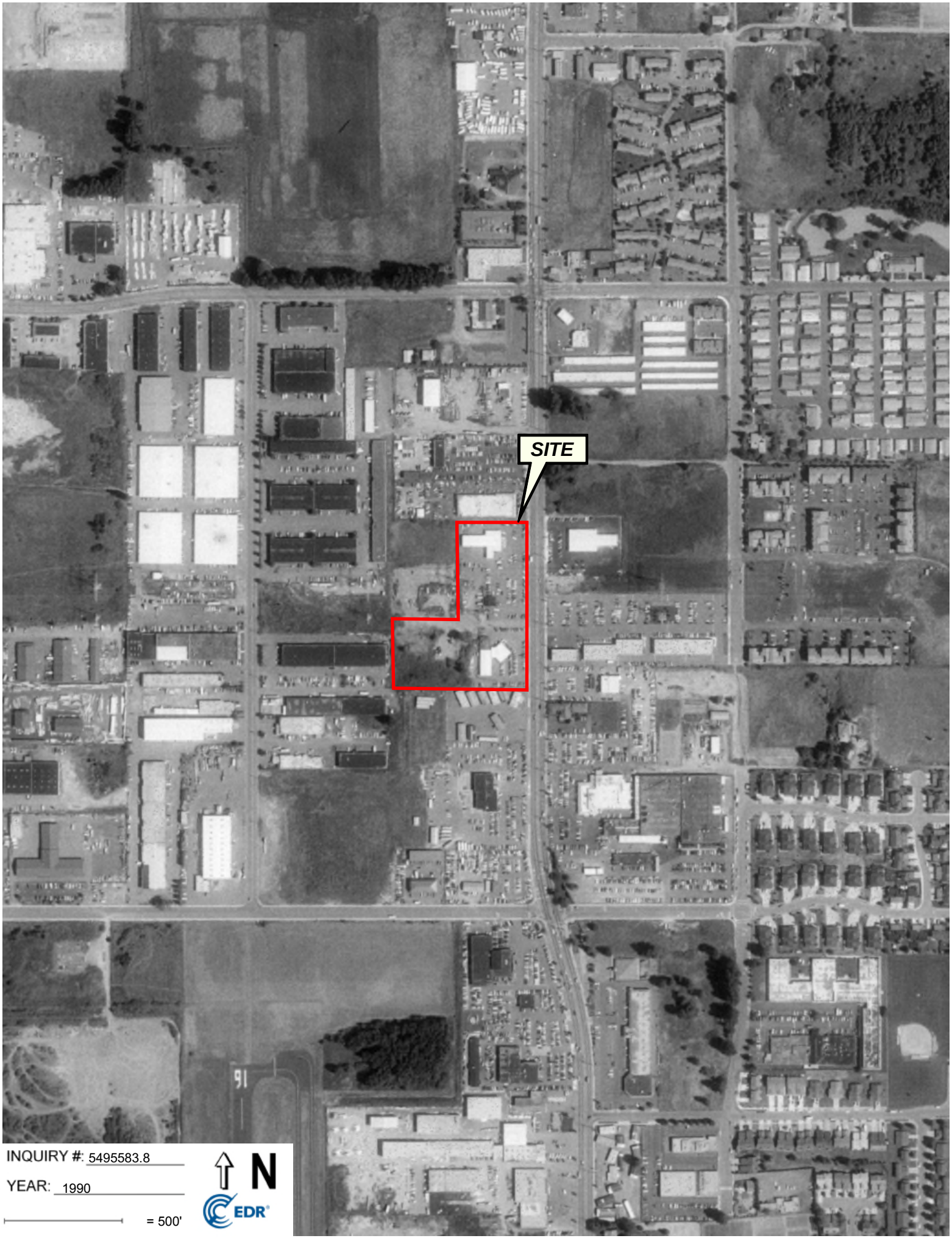
C. SIGNATURE:

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

OWNER/AGENT SIGNATURE: _____

DATE SUBMITTED: 10-11-85

ROEMPKE 000589


SITE
INQUIRY #: 5495583.8
YEAR: 1990
= 500'
N
EDR

SITE PLAN NOTES:

1. INSTALLATION OF CORPORATE STOPS, WATER SERVICES, LINES AND METERS SHALL BE PER CITY OF AUBURN STANDARD DETAILS. THE CITY WILL INSTALL THE METERS. THE CITY MAY, AT THE CITY'S OPTION, INSTALL SERVICES FROM MAIN LINE TO THE METER WHEN THE EXISTING WATER LINE IS IN AN EXISTING CITY STREET; ALL OTHER WORK BY CONTRACTOR. PLUMBING SUBCONTRACTOR SHALL VERIFY THE ADEQUACY OF THE SUPPLY LINE (SIZE/PRESSURE) PROPOSED AND REPORT ANY CONCERNS TO THE OWNER/ENGINEER PRIOR TO CONSTRUCTION.
2. SPRINKLER LINE, RISER, DOUBLE DETECTOR CHECK VALVE ASSEMBLY, PUMPER CONNECTION AND SUPPLY LINE, AND BUILDING SYSTEM BY OTHERS. A SEPARATE DETAILED PLAN SHALL BE SUBMITTED TO THE CITY OF AUBURN BY THE SPRINKLER CONTRACTOR AND APPROVED PRIOR TO INSTALLATION. THE DESIGN SHALL INCLUDE THE ITEMS ABOVE AS WELL AS DETAILS FOR RODDING AND BLOCKING. VERIFICATION OF PIPES SHOWN & PIPE SIZES OTHER THAN THOSE SHOWN BY THE SPRINKLER CONTRACTOR.
3. PUMPER PORT SHALL FACE STREET OR FIRE ACCESS, AND BE READILY ACCESSIBLE TO ANY FIRE VEHICLE FOR FIRE FIGHTING AND PUMPING OPERATION.
4. FLOOR DRAINS TO BE INSTALLED SHALL BE DIRECTED TO THE SANITARY SEWER VIA AN AN APPROVED OIL/WATER SEPARATOR.
5. OUTDOOR LIGHTING FIXTURES SHALL BE SHIELDED AND DIRECTED TO AVOID LIGHT SPILLAGE ONTO ADJACENT PROPERTIES AND AVOID GLARE FOR MOTORISTS TRAVELING ON ADJACENT STREETS.
6. STREET CURB SHALL BE PAINTED WITH FORMULA WD-Y1, FIVE FEET FROM EACH SIDE OF DRIVEWAY.
7. PROVIDE HOSE BIBS ● PERIMETER OF BUILDING PER OWNER REQUIREMENTS.
8. POST BUILDING ADDRESS W/ 18" HIGH LETTERS ON FACE OF BUILDING AS/IF REQUIRED BY THE CITY OF AUBURN.
9. CONTRACTOR SHALL COORDINATE POWER, CABLE, PHONE & GAS SERVICE W/ UTILITY PROVIDER. CONTRACTOR SHALL COORDINATE POWER, CABLE, PHONE & GAS SERVICE LOCATIONS W/ DEVELOPER/BUILDING OWNER.
10. MINIMUM OF 42 INCHES (42") OF COVER OVER WATERMAINS.
11. A FIRE SPRINKLER LINE REQUIRES A SEPARATE DETAILED PLAN AND APPROVAL BY THE FIRE MARSHALL. CONTACT FIRE DEPARTMENT FOR REQUIREMENTS.
12. THE OWNER WILL POST "CUSTOMER AND SERVICE PARKING ONLY" SIGNAGE ALONG THE NORTH BUILDING LINE (12 STALLS) AND ALONG THE SOUTH PROPERTY LINE (24 STALLS)

SHEET INDEX

C1	SITE, WATER & SEWER PLAN
C2	STORM DRAINAGE & GRADING PLAN
C3	DETAILS & NOTES
L1	LANDSCAPE AND IRRIGATION PLAN
A1.1	MAIN FLOOR PLAN
A1.2	MEZZANINE FLOOR PLAN
A1.3	REFLECTED CEILING PLANS
A2.1	ELEVATIONS
A3.1	ROOM SCHEDULE & DETAILS
A3.2	DOOR SCHEDULE & DETAILS
S0	FOUNDATION PLAN
S1	FOUNDATION PLAN
S2	MEZZANINE JOIST PLAN/DETAILS

WATER DATA TABLE

(1) FIELD LOCATE EX. WATERMAIN
CONTRACTOR SHALL REMOVE:
EXIST CAP & BLOCKING
INSTALL:
1-8"X8"X8" TEE (FLXFLXFL)
2-8" G.V. (FLXMJ)
1-8" CAP
CONC. THRUST BLOCKING.

(2) INSTALL:
* 1-6"X8"X8" TEE (FLXMJXMJ)
1-6" G.V. (FLXMJ)
CONC. THRUST BLOCKING.

(3) INSTALL:
1-6"X8"X8" TEE (FLXMJXMJ)
1-6" G.V. (FLXMJ)
1 FIRE HYD. ASSY PER CITY OF AUBURN STD DTL WAFH-1
CONC. THRUST BLOCKING

(4) INSTALL:
* 1" SUPPLY, NEW METER BOX & 1" METER PER CITY STDS. 1¼" BLDG SUPPLY PER CITY STD. DTL. NO. WASM-1

(5) INSTALL:
* 1" DEDUCT IRRIGATION METER & BACKFLOW VALVE PER CITY OF AUBURN STD. DTL. NO. WADM-1 (SEE L/S PLAN)

NOTE:
ADDITIONAL FITTINGS & PIPE MATERIAL MAY BE REQUIRED. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROVIDE THE NECESSARY FITTINGS AND MATERIAL TO INSTALL THE WATER SYSTEM.

* NOTE:
WATER METER SIZE AND SUPPLY LINE SHALL BE VERIFIED WITH OWNER/DEVELOPER. SPRINKLER SUPPLY LINE SHALL BE DESIGNED BY SPRINKLER DESIGNER. CONTRACTOR TO VERIFY SIZE OF TEE & LINES W/ DESIGNER PRIOR TO INSTALLATION.

(6) INSTALL:
1-8"X6" TEE (MJXFL)
1-6" G.V. (FLXMJ)
1-FIRE HYD. ASSY PER CITY OF AUBURN STD DTL WAFH-1

(7) INSTALL:
1-8" 45° BEND (MJXMJ)
CONC. THRUST BLOCKING

(8) INSTALL:
1-45° BEND (MJXMJ)
1-8"X6" REDUCER
CONC. THRUST BLOCKING
EX. F.H. TO BE REMOVED AND COORDINATED W/ CITY W & O
CONNECT EXIST. 6" MAIN TO PROPOSED LOOP AT THE 8"X6" REDUCER.

(9) RISER AND DDCV ASSY. PER CITY OF AUBURN STDS. & * SEPARATE SPRINKLER DRAWING

LEGEND

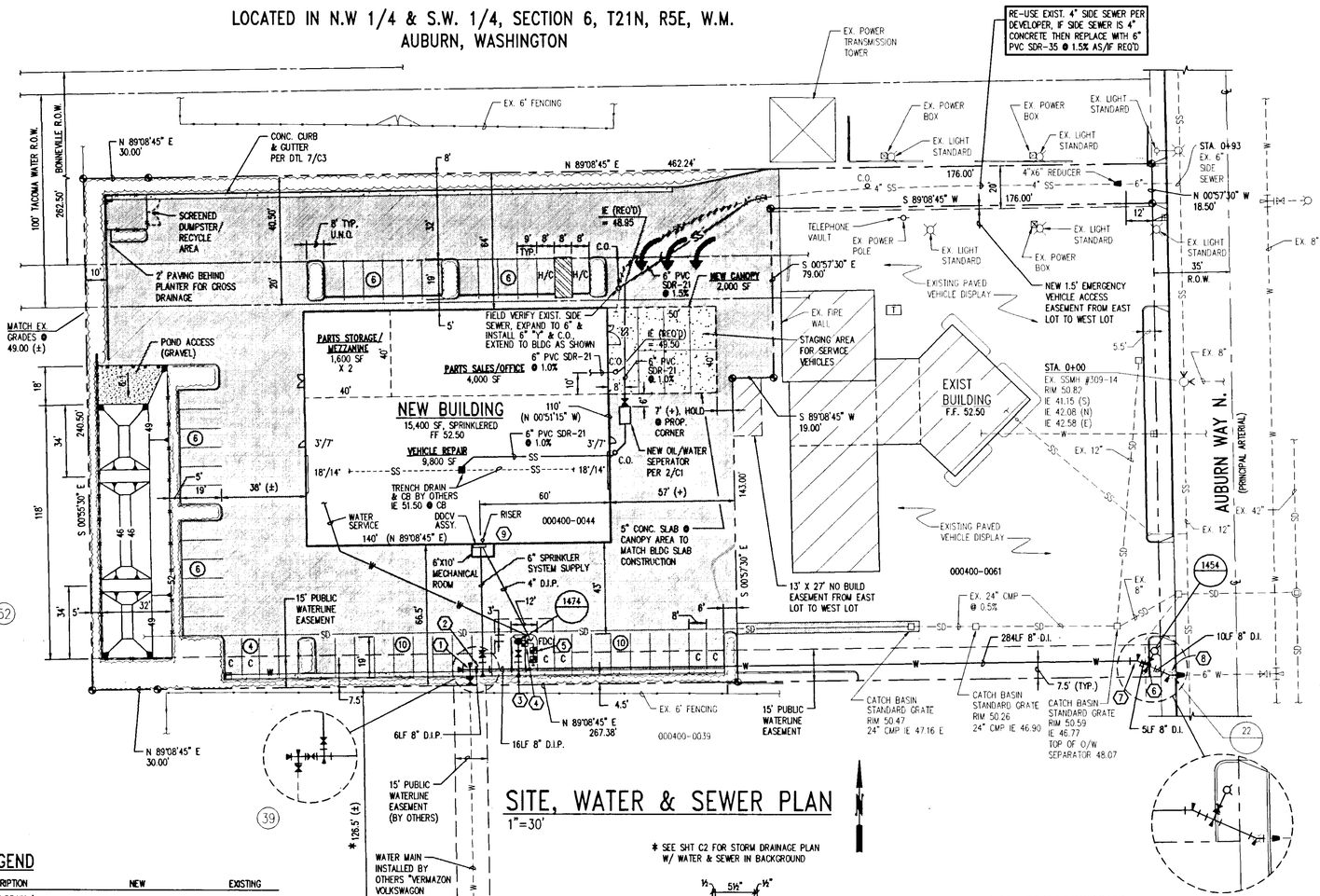
DESCRIPTION	NEW	EXISTING
ROOF DRAIN *		RD
STORM SEWER *		SD
SANITARY SEWER	SS	SS
WATER	W	W
GAS LINE		G
FIRE HYDRANT		
WATER VALVE		
WATER METER		
CATCH BASIN		
STORM MANHOLE		
CUSTOMER PARKING	X	
AC PAVING		
CONCRETE		
LANDSCAPING		
EXTRUDED CURB		
RIDGE LINE	RIDGE	
CONC. RETAINING WALL		
PAVEMENT FLOW		
CONTOUR	112	112
SPOT ELEVATION	115.00	115.00

UTILITY CONFLICT NOTE:

CAUTION:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, DIMENSION, AND DEPTH OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT BY POTHOLING THE UTILITIES AND SURVEYING THE HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE CALLING UTILITY LOCATE ● 1-800-424-5555 AND THEN POTHOLING ALL OF THE EXISTING UTILITIES AT LOCATIONS OF NEW UTILITY CROSSINGS TO PHYSICALLY VERIFY WHETHER OR NOT CONFLICTS EXIST. LOCATIONS OF SAID UTILITIES AS SHOWN ON THESE PLANS ARE NOT GUARANTEED AND ARE SUBJECT TO VARIATION. IF CONFLICTS SHOULD OCCUR, THE CONTRACTOR SHALL CONSULT POE ENGINEERING, INC. TO RESOLVE ALL PROBLEMS PRIOR TO PROCEEDING WITH CONSTRUCTION.

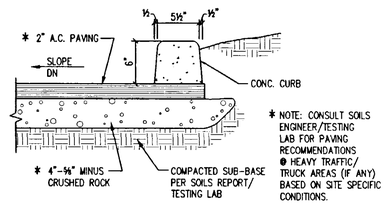
LOCATED IN N.W 1/4 & S.W. 1/4, SECTION 6, T21N, R5E, W.M.
AUBURN, WASHINGTON



SITE, WATER & SEWER PLAN

1"=30'

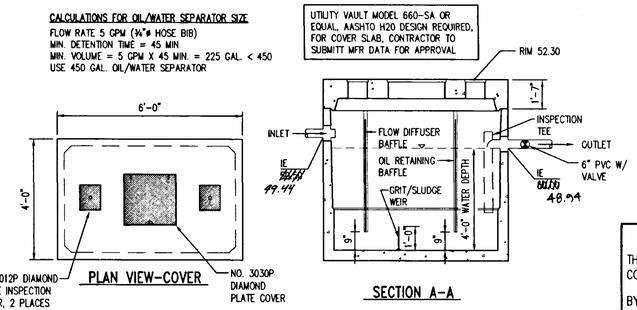
* SEE SHT C2 FOR STORM DRAINAGE PLAN W/ WATER & SEWER IN BACKGROUND



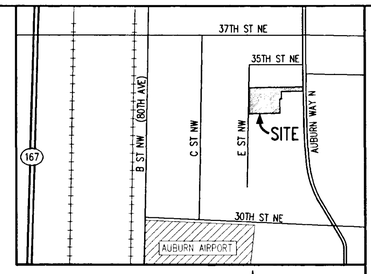
1/C1 CURB & PAVING SECTION
N.T.S.

CALCULATIONS FOR OIL/WATER SEPARATOR SIZE
FLOW RATE 5 GPM (⅝" ● HOSE BIB)
MIN. DETENTION TIME = 45 MIN
MIN. VOLUME = 5 GPM X 45 MIN. = 225 GAL. < 450
USE 450 GAL. OIL/WATER SEPARATOR

UTILITY VAULT MODEL 660-SA OR EQUAL, AASHTO H20 DESIGN REQUIRED, FOR COVER SLAB, CONTRACTOR TO SUBMITT MFR DATA FOR APPROVAL



2/C1 OIL/WATER SEPARATOR DETAIL
N.T.S.



VICINITY MAP
NTS

SITE DATA:

SITE AREA	1.76 ACRES (±)
ZONING	C3
OCCUPANCY	B, M, S3
CONSTRUCTION	5N
SPRINKLERS	YES
SETBACKS REQUIRED:	
FRONT (NORTH)	20'
SIDE	NONE
SIDE STREET	15'
REAR	NONE
SETBACKS PROVIDED:	
NORTH	64' (HOLD)
SOUTH	66.5'
EAST	5' (+)
WEST	100' (+)
BUILDING AREA	15,400 SF + 1,600 SF CANOPY
ALLOWABLE BUILDING AREA:	
BASIC	8,000 SF
SPRINKLER INCREASE	300%
SETBACK INCREASE	100% (MAX.)
ALLOWABLE AREA	48,000 SF
PERCENT SITE COVERAGE	23%
PARKING REQUIRED:	
SALES OFFICE	500 SF/250
VEHICLE REPAIR	9,800 SF/400
PARTS SALES	3,500 SF/500
PARTS STORAGE/ MEZZ.	3,200 SF/2,500
TOTAL	34.9 OR 35 STALLS
PARKING PROVIDED	48 (2 H/C) CUSTOMER & SERVICE

OWNER INFORMATION:

AUBURN VALLEY MOTOR GROUP
ATTN: MR. TITO ROEMPKE
3401 AUBURN WAY NORTH
AUBURN, WA. 98002
PH: (253) 854-9260
FX: (253) 939-7043

PROJECT SURVEYOR:

CENTRE POINT SURVEYING
33639 9TH AVENUE SO.
FEDERAL WAY, WA. 98003
PH: (253) 661-1901

PARCEL NUMBERS:

000400-0044, 000400-0061

LEGAL DESCRIPTIONS:

PARCEL 000400-0044

THE SOUTH 240.5 FEET OF THE FOLLOWING:
THAT PORTION OF THE HARVEY H. JONES DONATION CLAIM, NO. 39 IN SECTION 6, TOWNSHIP 21 NORTH, RANGE 5 EAST, W.M., IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:
BEGINNING AT A POINT ON THE WEST MARGINAL LINE OF P.S.H. NO. 5 (EAST VALLEY HIGHWAY) AS IT EXISTED PRIOR TO 1964, 989.55 FEET SOUTH OF THE NORTH LINE OF THE SOUTH ½ OF SAID H. H. JONES DONATION CLAIM, SAID POINT BEING ON THE NORTH LINE OF BONNEVILLE POWER EASEMENT AND MARKED BY A CONCRETE MONUMENT;
THENCE SOUTH 89° 08' 45" WEST, ALONG SAID NORTH LINE OF BONNEVILLE POWER EASEMENT, 497.11 FEET, TO THE NORTHERLY PRODUCTION OF THE EAST LINE OF THE PREMISES DESCRIBED IN THE CONTRACT RECORDED UNDER RECORDING NO. 5566617;
THENCE SOUTH 0° 55' 30" EAST, 462.5 FEET;
THENCE NORTH 89° 08' 45" EAST, 497.38 FEET, TO THE AFORESAID WEST MARGINAL LINE OF P.S.H. NO. 5;
THENCE NORTH 0° 57' 30" WEST, 462.5 FEET, TO THE POINT OF BEGINNING; EXCEPT THAT PORTION THEREOF CONVEYED TO THE STATE OF WASHINGTON BY DEED RECORDED UNDER RECORDING NO 5823137; AND EXCEPT THE WEST 30 FEET AND THE EAST 10 FEET CONVEYED TO CITY OF AUBURN BY DEED FILED UNDER RECORDING NO. 6148985; AND EXCEPT THAT PORTION THEREOF LYING EAST OF A LINE DESCRIBED AS FOLLOWS:
BEGINNING AT A POINT ON THE WEST MARGINAL LINE OF STATE HIGHWAY NO. 5 (EAST VALLEY HIGHWAY) AS IT EXISTED PRIOR TO 1964, 1,230.05 FEET SOUTH OF THE NORTH LINE OF THE SOUTH HALF OF THE HARVEY H. JONES DONATION CLAIM NO. 39, AS ABOVE MENTIONED;
THENCE SOUTH 89° 08' 45" WEST, 181.0 FEET;
THENCE SOUTH 0° 57' 30" EAST, 79 FEET;
THENCE SOUTH 89° 08' 45" WEST, 19 FEET;
THENCE SOUTH 0° 57' 30" EAST, 143 FEET TO THE TERMINUS OF SAID LINE, SITUATE IN THE CITY OF AUBURN, COUNTY OF KING, STATE OF WASHINGTON.

LEGAL DESCRIPTIONS: (CONT.)

PARCEL 000400-0061

BEGINNING AT A POINT ON THE WEST MARGINAL LINE OF STATE HIGHWAY NUMBER 5, 1230.05 FEET SOUTH OF THE NORTH LINE OF THE SOUTH HALF OF THE HARVEY H. JONES, D.C. NUMBER 39, SECTION 6, TOWNSHIP 21 NORTH, RANGE 5 EAST, W.M IN KING COUNTY WASHINGTON;
THENCE SOUTH 89° 08' 45" WEST, 181.0 FEET;
THENCE SOUTH 0° 57' 30" EAST, 79.0 FEET;
THENCE SOUTH 89° 08' 45" WEST, 19.0 FEET;
THENCE SOUTH 0° 57' 30" EAST, 143.0 FEET;
THENCE NORTH 89° 08' 45" EAST TO WEST MARGINAL LINE OF P.S.H. NUMBER 5;
THENCE NORTH ALONG THE WEST MARGINAL LINE OF SAID HIGHWAY TO POINT OF BEGINNING
EXCEPT THE EAST 5 FEET THEREOF AS CONVEYED TO CITY OF AUBURN BY DEED RECORDED UNDER RECORDING NUMBER 6148985;
EXCEPT EASEMENTS AND RIGHTS OF WAY TO UNITED STATES OF AMERICA RECORDED UNDER RECORDING NUMBERS 3251216 AND 4970569
EXCEPT THAT PORTION CONVEYED TO STATE OF WASHINGTON UNDER RECORDING NUMBER 5823137.

VERTICAL DATUM:

CITY OF AUBURN NGVD 29 VERT.

SITE BENCHMARK:

BENCHMARK #29-E., RR SPIKE ON POWER POLE, THIRD POLE EAST OF AUBURN WAY NORTH OF HITCO BLDG.
ELEVATION: 52.98 (CITY OF AUBURN DATUM)

GRA 0033-99, SEP 0014-99, BLD 00-0135, FAC 00-0023

RECORD DRAWING CERTIFICATION
THESE DRAWINGS CONFORM TO THE CONTRACTOR'S CONSTRUCTION RECORDS.
BY: _____ DATE: 2-1-01
TITLE/POSITION: Pres.
CONFIRMED BY CITY_____ DATE:_____

PROJECT REF: FAC 00-0023, BLD 00-0135
THESE PLANS ARE "APPROVED" FOR CONFORMANCE WITH THE CITY OF AUBURN ENGINEERING DIVISION'S REQUIREMENTS
APPROVED BY: Dennis Selle 9/14/00
DATE APPROVED: 8/14/00

REV.	DATE	BY	DESCRIPTION
1	07/24/00	G.M.O	CITY OF AUBURN COMMENTS
2	08/08/00	G.M.O	CITY OF AUBURN COMMENTS
3	01/31/01	G.M.O	AS-BUILT CHANGES
4	04/2/01	J.P.P.	AS BUILT CHANGES

POE Engineering, Inc.
CIVIL & STRUCTURAL ENGINEERING/CONSULTING
1314 8TH STREET N.E., SUITE 102
AUBURN, WASHINGTON 98002
(253) 833-4052 / FAX (253) 833-4053

JOB TITLE: AUBURN VALLEY MOTORS SERVICE BUILDING — 3319 AUBURN WAY NORTH, AUBURN, WA

FAC 00-0023

SHEET TITLE: SITE, WATER & SEWER PLAN

ALAN F. POE, STATE OF WASHINGTON, 27080, REGISTERED PROFESSIONAL ENGINEER
EXPIRES 3/8/2001
8/9/00

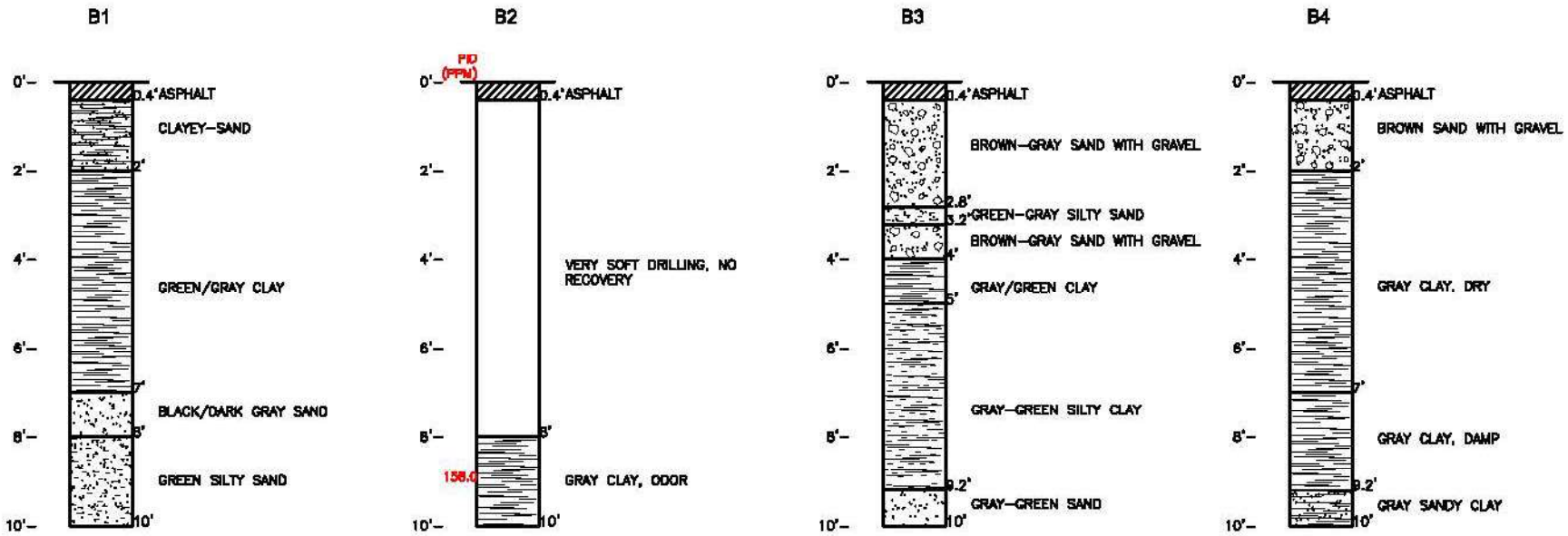
DATE: APRIL 2000
DRAWN BY: G.MO
DESIGN BY: A.F.P.
JOB NO.: 00-016
SHEET NO.: C1

PF 89 1 of 4

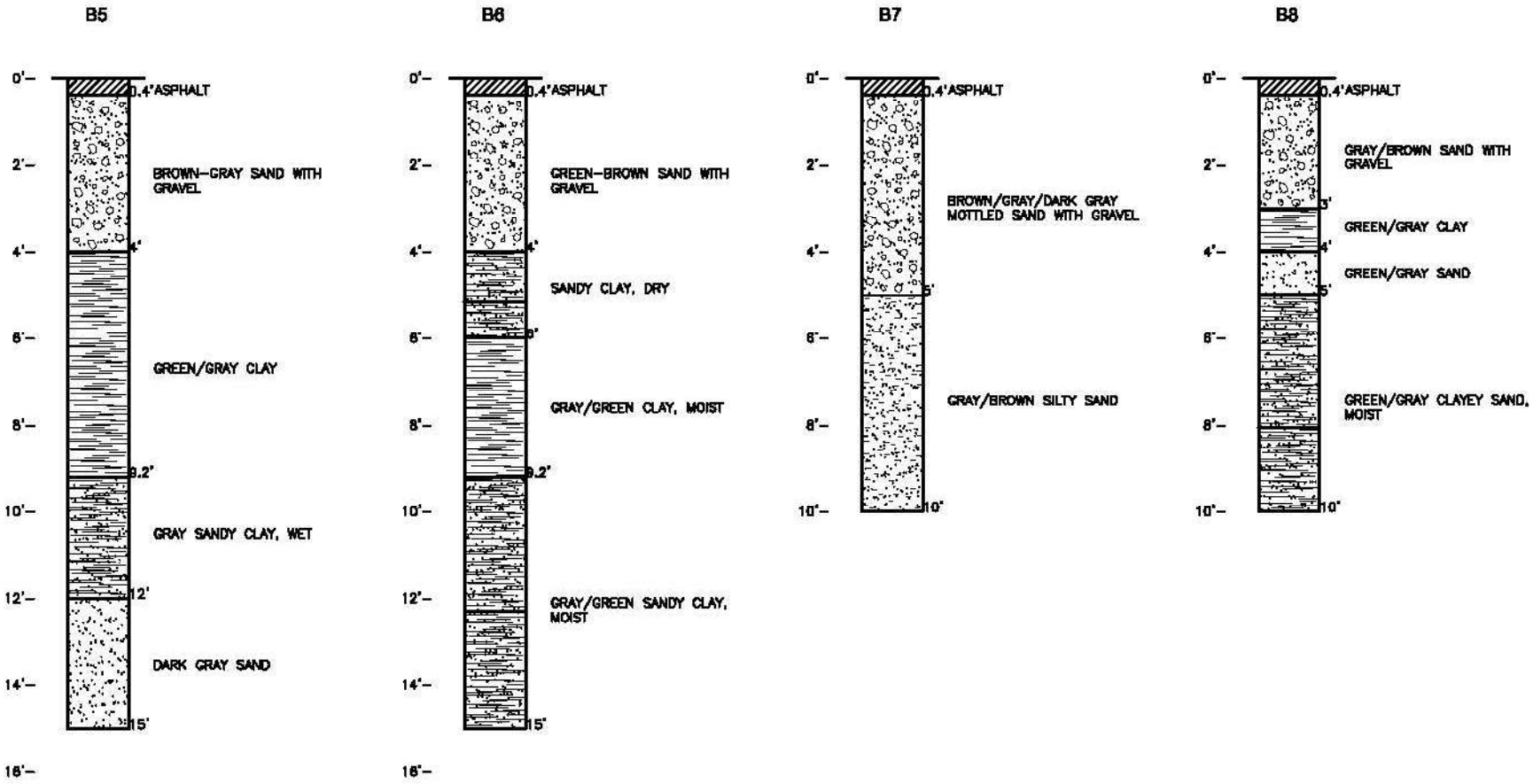
Q409309 01D1611


SITE
INQUIRY #: 5495583.8
YEAR: 2006
= 500'
N
EDR

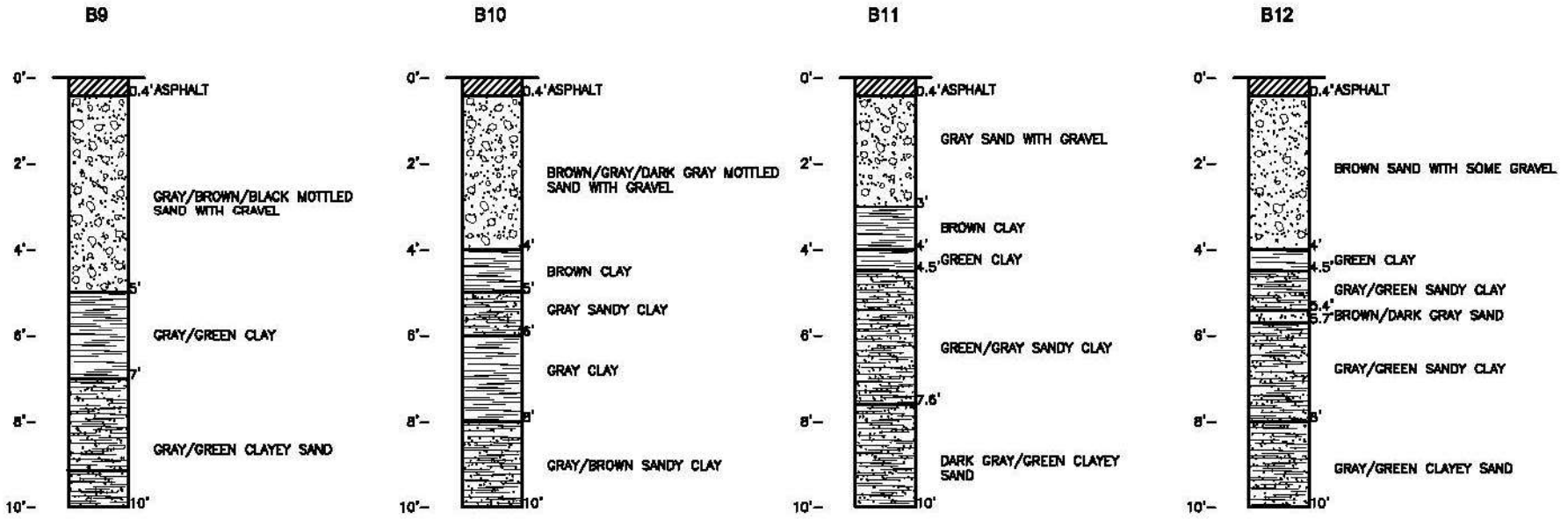
Appendix B



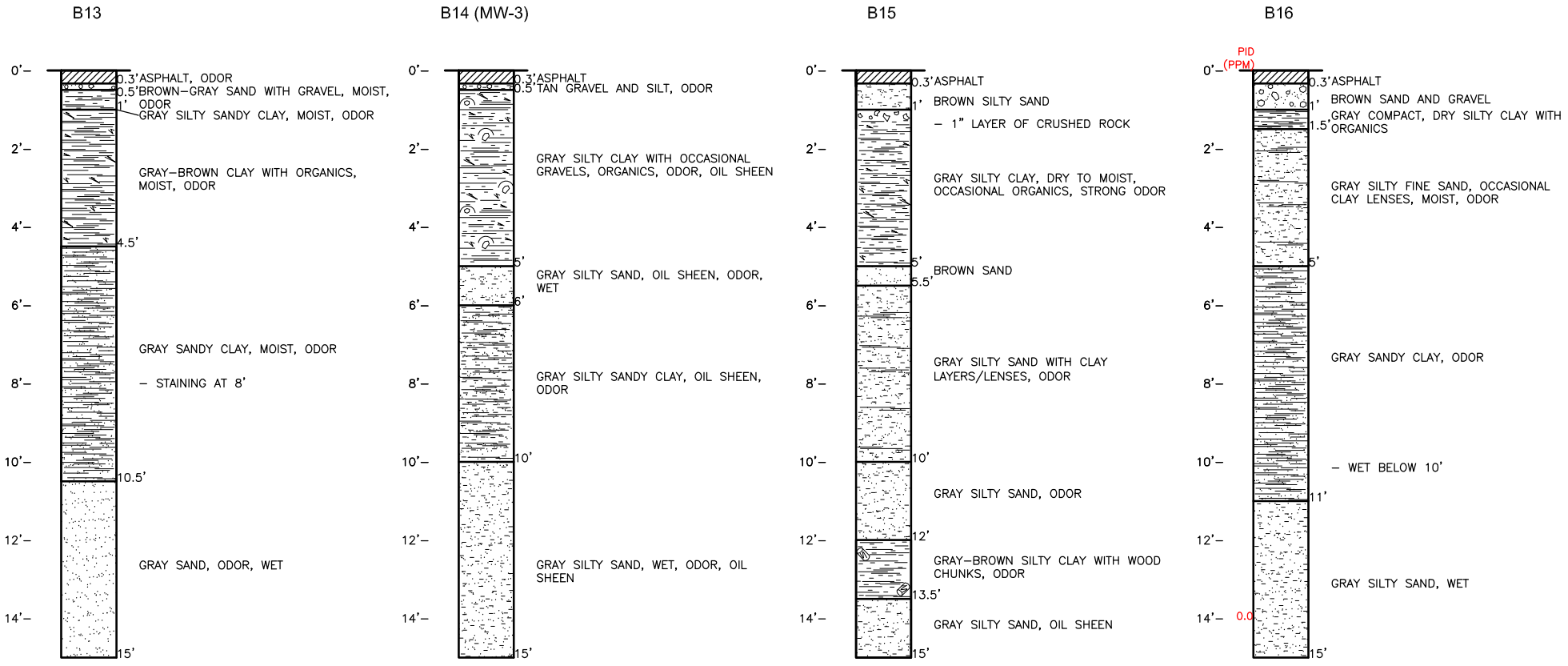
ROBINSON NOBLE	PM: JFH April 2019 3350-001A	King County T 21 N/R 05 E - 06	Figure 3 Geologic Logs; Borings B1 through B4 Sunset Kia-Mitsubishi: Subsurface Investigation



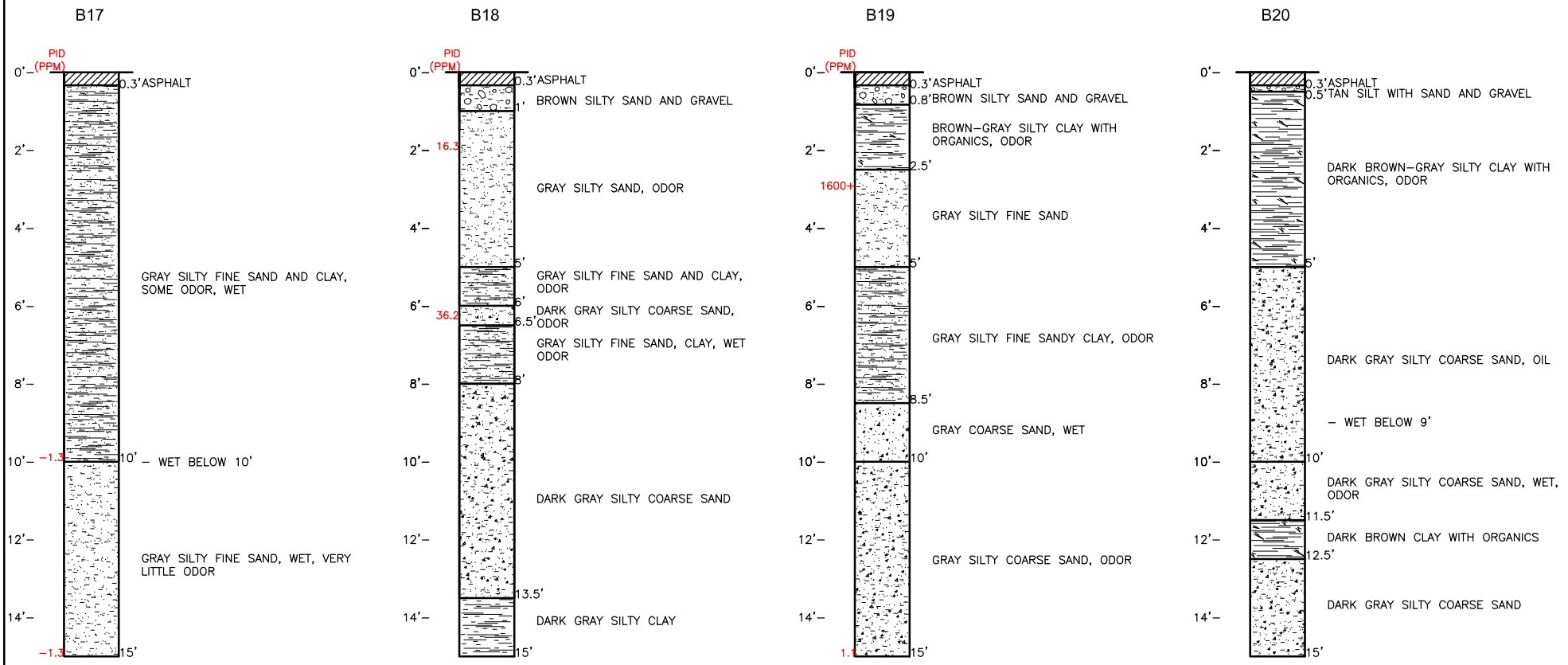
ROBINSON NOBLE	PM: JFH April 2019 3350-001A	King County T 21 N/R 05 E - 06	Figure 4 Geologic Logs; Borings B5 through B8 Sunset Kia-Mitsubishi: Subsurface Investigation



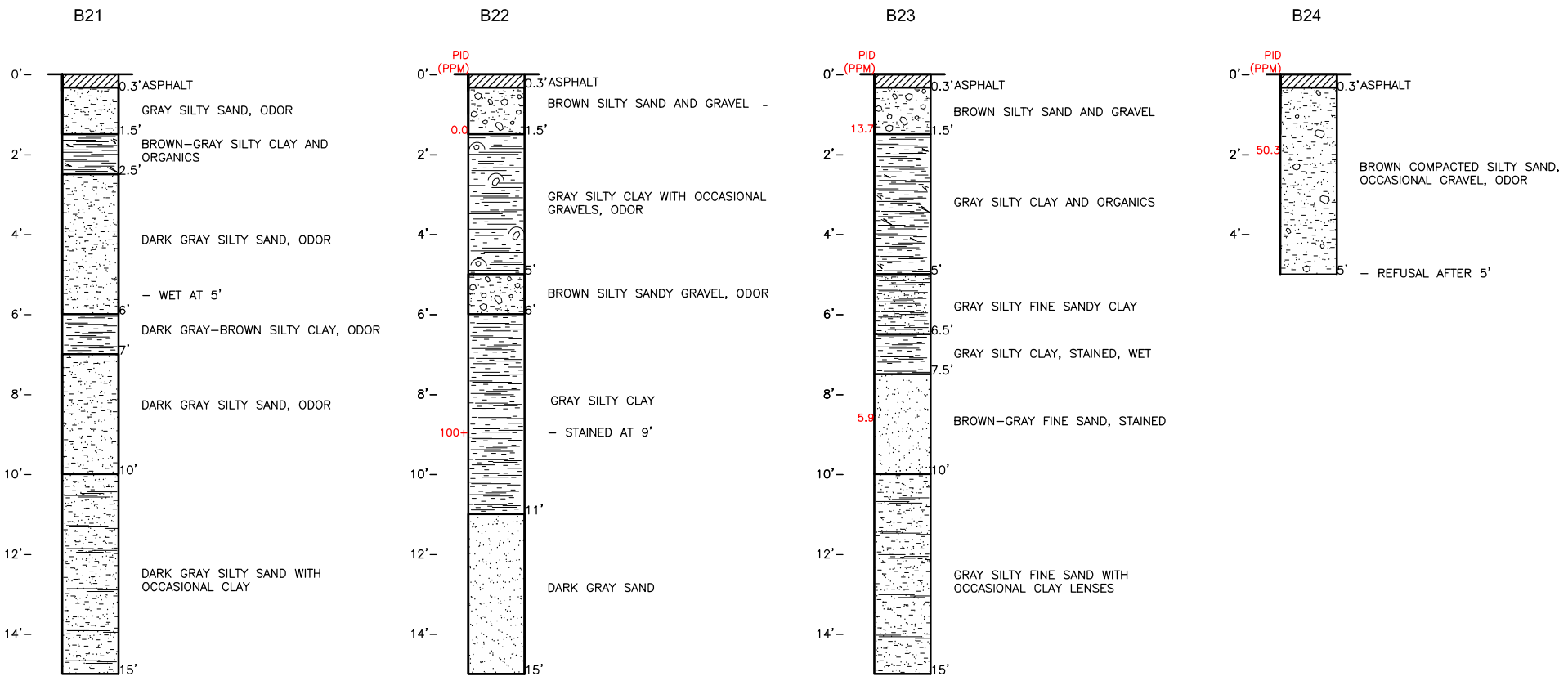
ROBINSON NOBLE	PM: JFH April 2019 3350-001A	King County T 21 N/R 05 E - 06	Figure 5 Geologic Logs; Borings B9 through B12 Sunset Kia-Mitsubishi: Subsurface Investigation



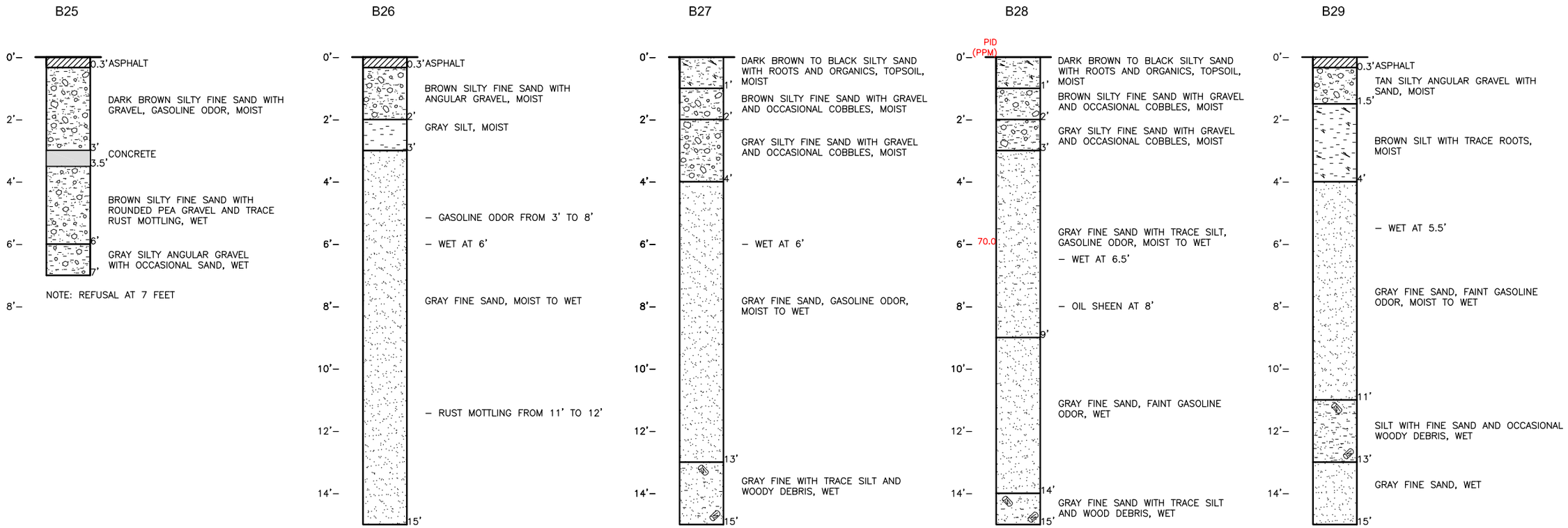
ROBINSON NOBLE	PM: JFH November 2019 3350-001B	King County T 21 N/R 05 E - 06	Figure 5A Geologic Logs; Borings B13 through B16 Sunset Kia-Mitsubishi: Subsurface Investigation



ROBINSON NOBLE	PM: JFH November 2019 3350-001B	King County T 21 N/R 05 E - 06	Figure 5B Geologic Logs; Borings B17 through B20 Sunset Kia-Mitsubishi: Subsurface Investigation



ROBINSON NOBLE	PM: JFH November 2019 3350-001B	King County T 21 N/R 05 E - 06	Figure 5C Geologic Logs; Borings B21 through B24 Sunset Kia-Mitsubishi: Subsurface Investigation



ROBINSON NOBLE	PM: JFH March 2020 3350-001C	King County T 21 N/R 05 E - 06	Figure 3 Geologic Logs; Borings B25 through B29 Sunset Kia-Mitsubishi: Additional Remedial Investigation

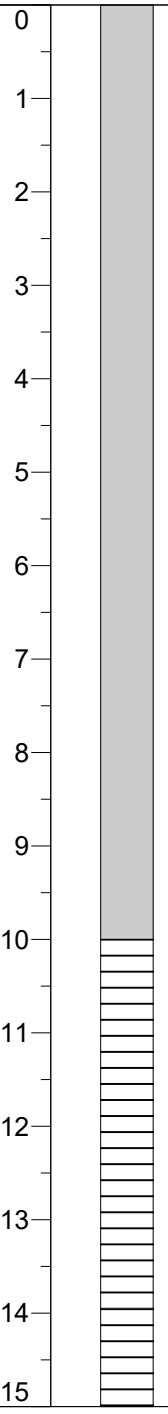
PROJECT: **Sunset Auburn Phase II ESA**
Auburn, WA

Log of B30

BORING LOCATION: B30	GROUND SURFACE ELEVATION AND DATUM (FEET MSL): Not measured
DRILLING CONTRACTOR: ESN	DATE STARTED: 7/14/20 / DATE FINISHED: 7/14/20
DRILLING METHOD: Direct Push	TOTAL DEPTH (ft.): 15 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER: DURING: 9.6 / AFTER: --
LOGGED BY: JH/MK/NS	SCREEN INTERVAL: 10-15 / BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0	SO-B30-2-4-071420				Portland Cement Concrete	No odors or staining noted in soil column
1				0.6	FILL - Fine to Coarse SAND with gravel, trace concrete, gray, moist	
2						
3				1.3		
4					SANDY SILT, gray, moist	
5				0.7		
6						
7				0.0		
8					SILTY SAND and SANDY SILT, gray, moist to wet	
9				0.0		
10						
11				0.0	SILTY SAND, gray, wet	
12						
13				0.0		
14					Fine SILTY SAND, gray, wet	
15				0.0		

TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



1-inch diameter schedule 40 PVC casing

1-inch diameter schedule 40, 5-foot long, 0.010 slot size, PVC screen

Groundwater sample collected from temporary monitoring well

PROJECT: **Sunset Auburn Phase II ESA**
Auburn, WA

Log of B31

BORING LOCATION: B31	GROUND SURFACE ELEVATION AND DATUM (FEET MSL): Not measured
DRILLING CONTRACTOR: ESN	DATE STARTED: 7/14/20 / DATE FINISHED: 7/14/20
DRILLING METHOD: Direct Push	TOTAL DEPTH (ft.): 10 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER: DURING: 8 / AFTER: --
LOGGED BY: JH/MK/NS	SCREEN INTERVAL: NA / BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	Sample	Litho.	PID Reading	DESCRIPTION	BORING REMARKS	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0	SO-B31-3-5-071420				Portland Cement Concrete	No odors or staining noted in soil column	No Temporary Well Installed
1				0.0			
2					FILL - Fine to Coarse SAND, brown, moist		
3				0.2			
4							
5				0.0	CLAYEY SAND, brown, moist		
6							
7				0.0	SANDY SILT, gray, moist to wet		
8							
9				0.0			
10							

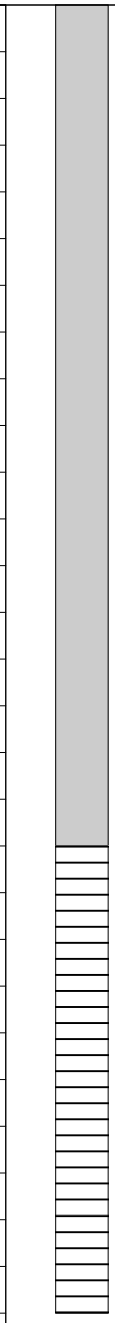
PROJECT: **Sunset Auburn Phase II ESA**
Auburn, WA

Log of B32

BORING LOCATION: B32	GROUND SURFACE ELEVATION AND DATUM (FEET MSL): Not measured
DRILLING CONTRACTOR: ESN	DATE STARTED: 7/14/20 / DATE FINISHED: 7/14/20
DRILLING METHOD: Direct Push	TOTAL DEPTH (ft.): 15 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER: DURING: 9.6 / AFTER: --
LOGGED BY: JH/MK/NS	SCREEN INTERVAL: 9-14 / BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0	SO-B32-3-5-071420				Portland Cement Concrete	No odors or staining noted in soil column
1				0.0		
2						
3				20.0	FILL - Fine to Coarse SAND, trace gravel, brown, moist	
4						
5				0.4	LEAN CLAY, brown	
6						
7				0.0		
8						
9				0.0		
10					SANDY SILT, gray, moist to wet	
11				0.0		
12						
13				0.0		
14						
15				0.0	SILTY SAND, gray, wet	

TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



Groundwater sample collected from temporary monitoring well

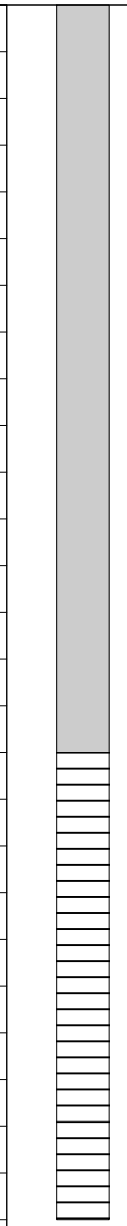
PROJECT: **Sunset Auburn Phase II ESA**
Auburn, WA

Log of B33

BORING LOCATION: B33	GROUND SURFACE ELEVATION AND DATUM (FEET MSL): Not measured
DRILLING CONTRACTOR: ESN	DATE STARTED: 7/14/20 / DATE FINISHED: 7/14/20
DRILLING METHOD: Direct Push	TOTAL DEPTH (ft.): 15 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER: DURING: 7.7 / AFTER: --
LOGGED BY: JH/MK/NS	SCREEN INTERVAL: 8-13 / BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0	SO-B33-2-4-071420				Portland Cement Concrete	No odors or staining noted in soil column
1				0.0	FILL - Fine to Coarse SAND with gravel, brown, moist	
2						
3				0.0	SILT, gray, moist	
4						
5				0.0		
6						
7				0.0		
8						
9				0.0		
10					SANDY SILT, gray, moist to wet	
11				0.0		
12						
13				0.0		
14						
15				0.0		

TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



1-inch diameter schedule 40 PVC casing

1-inch diameter schedule 40, 5-foot long, 0.010 slot size, PVC screen

Groundwater sample collected from temporary monitoring well

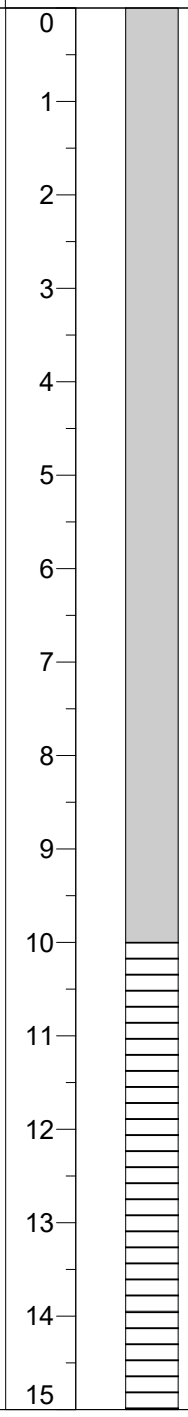
PROJECT: **Sunset Auburn Phase II ESA**
Auburn, WA

Log of B34

BORING LOCATION: B34	GROUND SURFACE ELEVATION AND DATUM (FEET MSL): Not measured
DRILLING CONTRACTOR: ESN	DATE STARTED: 7/14/20 / DATE FINISHED: 7/14/20
DRILLING METHOD: Direct Push	TOTAL DEPTH (ft.): 15 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER: DURING: 11.5 / AFTER: --
LOGGED BY: JH/MK/NS	SCREEN INTERVAL: 10-15 / BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0	SO-B34-2-4-071420				Portland Cement Concrete	No odors or staining noted in soil column
1				0.0		
2					FILL - Fine to Coarse SAND with gravel, brown, moist	
3				0.0		
4					LEAN SILTY CLAY, brown	
5				0.0		
6						
7				0.0		
8						
9				0.0		
10					SILT with sand, gray, moist to wet	
11				0.0		
12						
13				0.0		
14						
15				0.0		

TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



1-inch diameter schedule 40 PVC casing

1-inch diameter schedule 40, 5-foot long, 0.010 slot size, PVC screen

Groundwater sample collected from temporary monitoring well

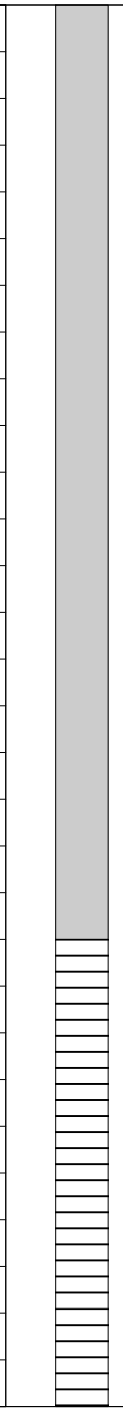
PROJECT: **Sunset Auburn Phase II ESA**
Auburn, WA

Log of B35

BORING LOCATION: B35		GROUND SURFACE ELEVATION AND DATUM (FEET MSL): Not measured	
DRILLING CONTRACTOR: ESN		DATE STARTED: 7/14/20	DATE FINISHED: 7/14/20
DRILLING METHOD: Direct Push		TOTAL DEPTH (ft.): 10	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Geoprobe		DEPTH TO WATER: DURING: 6.8	AFTER: --
LOGGED BY: JH/MK/NS		SCREEN INTERVAL: 10-15	BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0	SO-B35-2-4-071420				Portland Cement Concrete	
1				0.0	FILL - Fine to Coarse SAND with gravel, brown, moist	
2						
3				0.0		
4					LEAN SILTY CLAY, gray	
5				0.0		No odors or staining noted in soil column
6					SANDY SILT, gray, moist to wet	
7				0.0		
8						
9				0.0	SILT, gray, wet	
10						
11						After logging, an extra interval was pushed to facilitate groundwater sampling when no water was available initially.
12						
13						
14						
15						

TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



1-inch diameter schedule 40 PVC casing

1-inch diameter schedule 40, 5-foot long, 0.010 slot size, PVC screen

Groundwater sample collected from temporary monitoring well

PROJECT: **Sunset Auburn Phase II ESA**
Auburn, WA

Log of B36

BORING LOCATION: B36	GROUND SURFACE ELEVATION AND DATUM (FEET MSL): Not measured
DRILLING CONTRACTOR: ESN	DATE STARTED: 7/14/20 / DATE FINISHED: 7/14/20
DRILLING METHOD: Direct Push	TOTAL DEPTH (ft.): 10 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER: DURING: 7 / AFTER: --
LOGGED BY: JH/MK/NS	SCREEN INTERVAL: NA / BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0					Portland Cement Concrete		
1				0.5	Fine to Coarse SAND with gravel, some cobbles, brown, moist		
2							
3				0.7			
4					LEAN CLAY, brown		
5	SO-B36-5-7-071420			0.5		No odors or staining noted in soil column	No Temporary Well Installed
6							
7				2.0	SILT, brown, moist		
8					Fine SILTY SAND, brown and gray, wet		
9				1.5			
10							

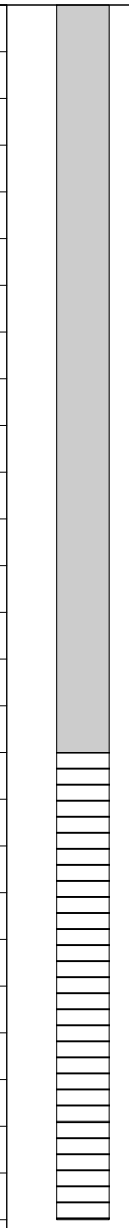
PROJECT: **Sunset Auburn Phase II ESA**
Auburn, WA

Log of B37

BORING LOCATION: B37	GROUND SURFACE ELEVATION AND DATUM (FEET MSL): Not measured
DRILLING CONTRACTOR: ESN	DATE STARTED: 7/14/20 / DATE FINISHED: 7/14/20
DRILLING METHOD: Direct Push	TOTAL DEPTH (ft.): 15 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER: DURING: 7.39 / AFTER: --
LOGGED BY: JH/MK/NS	SCREEN INTERVAL: 8-13 / BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0	SO-B37-5-7-071420				Portland Cement Concrete	No odors or staining noted in soil column
1				0.0	FILL - Fine to Coarse SAND with gravel, trace concrete, brown, moist	
2						
3				1.4	LEAN CLAY, brown	
4						
5				2.0		
6					SILT, gray, moist	
7				1.7		
8						
9				0.0		
10					Fine SILTY SAND, gray, wet	
11				1.2		
12						
13				0.0		
14					SANDY SILT, gray, wet	
15				0.0		

TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



1-inch diameter schedule 40 PVC casing

1-inch diameter schedule 40, 5-foot long, 0.010 slot size, PVC screen

Groundwater sample collected from temporary monitoring well

PROJECT: **Sunset Auburn Phase II ESA**
Auburn, WA

Log of B38

BORING LOCATION: B38		GROUND SURFACE ELEVATION AND DATUM (FEET MSL): Not measured	
DRILLING CONTRACTOR: ESN		DATE STARTED: 7/14/20	DATE FINISHED: 7/14/20
DRILLING METHOD: Direct Push		TOTAL DEPTH (ft.): 10	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Geoprobe		DEPTH TO WATER: DURING: 7.5	AFTER: --
LOGGED BY: JH/MK/NS		SCREEN INTERVAL: NA	BOREHOLE BACKFILL: Bentonite

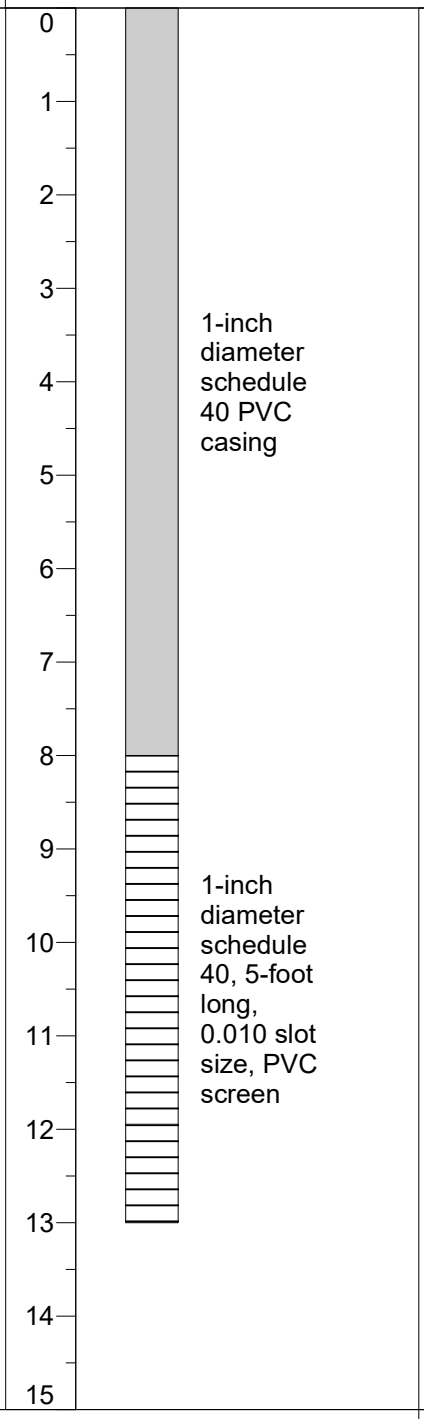
DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0					Portland Cement Concrete		
1				0.0	FILL - Fine to Coarse SAND with gravel, brown, moist		
2							
3				0.0	LEAN CLAY, brown		
4	SO-B38-4-6-071420						
5				15.2		No odors or staining noted in soil column	No Temporary Well Installed
6							
7				1.7	SANDY SILT, gray, moist to wet		
8							
9				0.0			
10							

PROJECT: **Sunset Auburn Phase II ESA**
Auburn, WA

Log of B39

BORING LOCATION: B39		GROUND SURFACE ELEVATION AND DATUM (FEET MSL): Not measured	
DRILLING CONTRACTOR: ESN		DATE STARTED: 7/14/20	DATE FINISHED: 7/14/20
DRILLING METHOD: Direct Push		TOTAL DEPTH (ft.): 15	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Geoprobe		DEPTH TO WATER: DURING: 8	AFTER: --
LOGGED BY: JH/MK/NS		SCREEN INTERVAL: 8-13	BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0					Portland Cement Concrete	
1				0.0		
2					FILL - Fine to Coarse SAND with gravel, brown, moist	
3				0.0		
4						
5				0.0		No odors or staining noted in soil column
6	SO-B39-5-7-071420				LEAN CLAY, brown	
7				0.0		
8						
9				0.0		
10					SILTY SAND, gray, wet	
11				0.0		
12						
13				0.0		
14					SANDY SILT, gray, wet	
15				0.0		



TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS

Groundwater sample collected from temporary monitoring well

PROJECT: **Sunset Auburn Phase II ESA**
Auburn, WA

Log of B40

BORING LOCATION: B40		GROUND SURFACE ELEVATION AND DATUM (FEET MSL): Not measured	
DRILLING CONTRACTOR: ESN		DATE STARTED: 7/14/20	DATE FINISHED: 7/14/20
DRILLING METHOD: Direct Push		TOTAL DEPTH (ft.): 10	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Geoprobe		DEPTH TO WATER: DURING: 8	AFTER: --
LOGGED BY: JH/MK/NS		SCREEN INTERVAL: NA	BOREHOLE BACKFILL: Bentonite

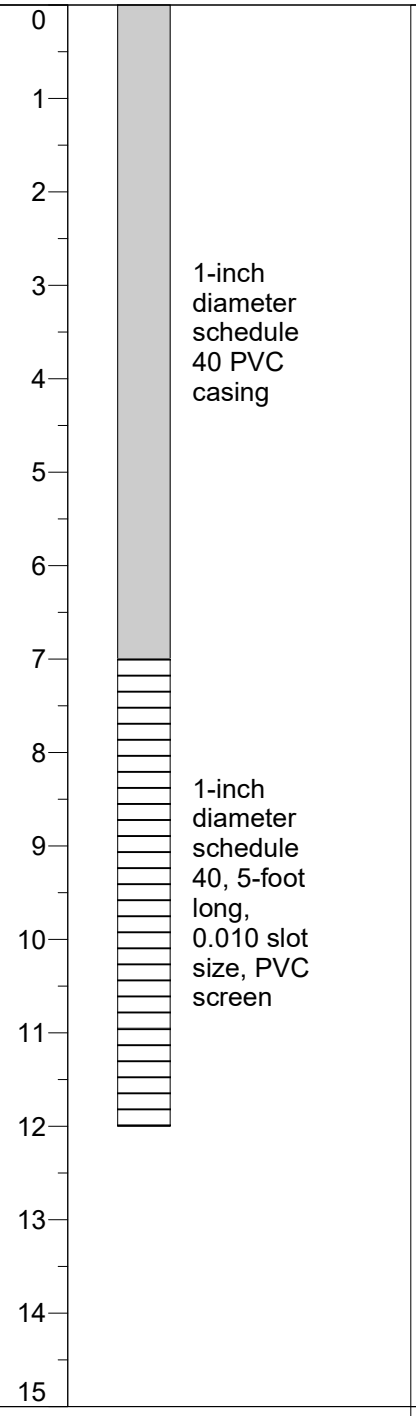
DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0	SO-B40-5-7-071420				Portland Cement Concrete	No odors or staining noted in soil column	No Temporary Well Installed
1				0.0			
2					FILL - GRAVEL with sand, gray, moist		
3				0.0			
4							
5				0.0	LEAN CLAY, brown		
6							
7				0.0	SILT, gray, moist		
8							
9				0.0	Fine SILTY SAND, gray, wet		
10							

PROJECT: **Sunset Auburn Phase II ESA**
Auburn, WA

Log of B41

BORING LOCATION: B41		GROUND SURFACE ELEVATION AND DATUM (FEET MSL): Not measured	
DRILLING CONTRACTOR: ESN		DATE STARTED: 7/14/20	DATE FINISHED: 7/14/20
DRILLING METHOD: Direct Push		TOTAL DEPTH (ft.): 15	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Geoprobe		DEPTH TO WATER: DURING: 7.11	AFTER: --
LOGGED BY: JH/MK/NS		SCREEN INTERVAL: 7-12	BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0	SO-B41-3-5-071420				Portland Cement Concrete	No odors or staining noted in soil column
1				1.0	FILL - Fine to Coarse SAND with gravel, trace asphalt at 3', brown, moist	
2						
3				1.1	LEAN CLAY, brown	
4						
5				2.0	CLAYEY SILT, brown, moist	
6						
7				1.8	Fine SILTY SAND, gray, wet	
8						
9				0.2		
10						
11				0.5		
12						
13				0.4		
14					SANDY SILT, gray, wet	
15				0.0		



TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS

Groundwater sample collected from temporary monitoring well

PROJECT: **Sunset Auburn Phase II ESA**
Auburn, WA

Log of B42

BORING LOCATION: B42	GROUND SURFACE ELEVATION AND DATUM (FEET MSL): Not measured
DRILLING CONTRACTOR: ESN	DATE STARTED: 7/14/20 / DATE FINISHED: 7/14/20
DRILLING METHOD: Direct Push	TOTAL DEPTH (ft.): 15 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER: DURING: 9.5 / AFTER: --
LOGGED BY: JH/MK/NS	SCREEN INTERVAL: 10-15 / BOREHOLE BACKFILL: Bentonite

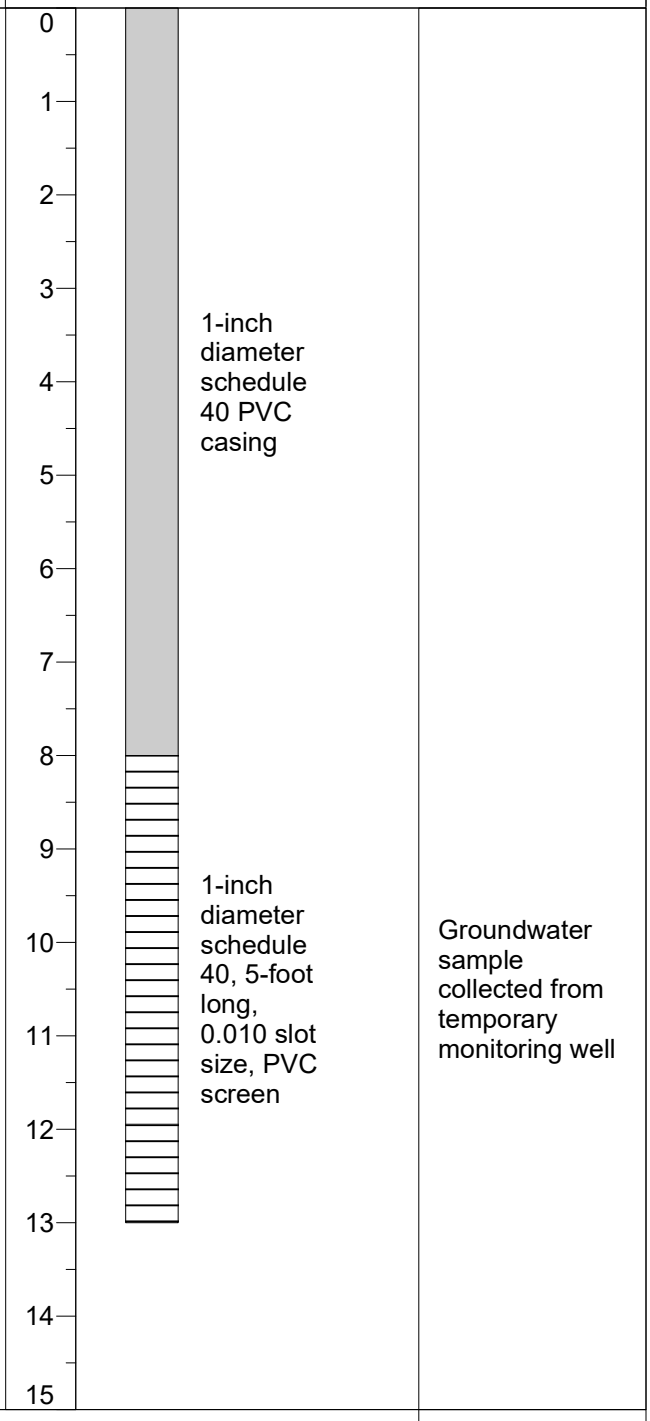
DEPTH (feet)	SAMPLES: Sample No.	Sample	Litho.	PID Reading	DESCRIPTION	BORING REMARKS	TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0					ASPHALT		
1				0.0			
2							
3				0.0			
4	SO-B42-4-6-071420				FILL - Fine to Coarse SAND with gravel, trace concrete, trace brick, trace wood, moist	No odors or staining noted in soil column	1-inch diameter schedule 40 PVC casing
5				0.0			
6							
7				0.0			
8							
9				0.0			
10							
11				0.0	SANDY SILT, brown and gray, moist to wet		1-inch diameter schedule 40, 5-foot long, 0.010 slot size, PVC screen
12							Groundwater sample collected from temporary monitoring well
13				0.0			
14							
15				0.0			

PROJECT: **Sunset Auburn Phase II ESA**
Auburn, WA

Log of B43

BORING LOCATION: B43	GROUND SURFACE ELEVATION AND DATUM (FEET MSL): Not measured
DRILLING CONTRACTOR: ESN	DATE STARTED: 7/14/20 / DATE FINISHED: 7/14/20
DRILLING METHOD: Direct Push	TOTAL DEPTH (ft.): 15 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER: DURING: 10.3 / AFTER: --
LOGGED BY: JH/MK/NS	SCREEN INTERVAL: 8-13 / BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0					ASPHALT	
1	SO-B43-2-4-071420			0.0	FILL - Fine to Coarse SAND with gravel, brown, moist	
2						
3				3.4		
4					SANDY SILT, gray, moist to wet	No odors or staining noted in soil column
5				1.8		
6						
7				0.8		
8						
9				0.0	SILTY SAND, gray, wet	
10						
11				0.0	SANDY SILT, gray, wet	
12						
13				0.0		
14						
15				0.0		



TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS

Groundwater sample collected from temporary monitoring well

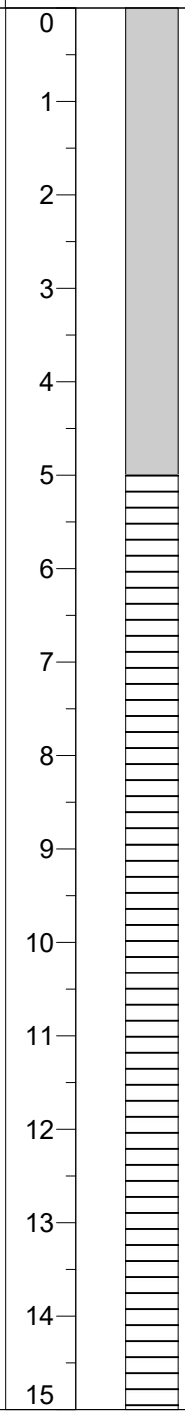
PROJECT: **Sunset Auburn Phase II ESA**
Auburn, WA

Log of B44

BORING LOCATION: B44		GROUND SURFACE ELEVATION AND DATUM (FEET MSL): Not measured	
DRILLING CONTRACTOR: ESN		DATE STARTED: 7/14/20	DATE FINISHED: 7/14/20
DRILLING METHOD: Direct Push		TOTAL DEPTH (ft.): 15	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Geoprobe		DEPTH TO WATER: DURING: 10	AFTER: --
LOGGED BY: JH/MK/NS		SCREEN INTERVAL: 5-15	BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0					ASPHALT	
1				--		
2						
3				--		
4						
5				--	CLAYEY SILT, grey to dark brown, moist to wet	Slight petroleum odor
6						
7				--		
8						
9	SO-B44-8-11-071420			0.7		
10						
11				0.0	Fine to medium SAND, dark gray, wet	Slight petroleum odor
12						
13				0.0	Very fine SILTY SAND, trace wood, dark gray and brown, wet	
14						
15				0.0	Medium SAND, dark gray, wet	Slight petroleum odor

TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



1-inch diameter schedule 40 PVC casing

1-inch diameter schedule 40, 5-foot long, 0.010 slot size, PVC screen

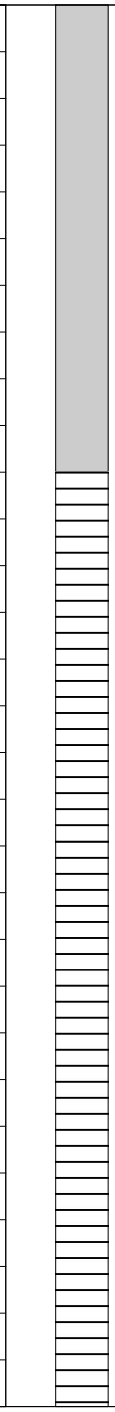
Groundwater sample collected from temporary monitoring well

PROJECT: **Sunset Auburn Phase II ESA**
Auburn, WA

Log of B45

BORING LOCATION: B45	GROUND SURFACE ELEVATION AND DATUM (FEET MSL): Not measured
DRILLING CONTRACTOR: ESN	DATE STARTED: 7/14/20 / DATE FINISHED: 7/14/20
DRILLING METHOD: Direct Push	TOTAL DEPTH (ft.): 15 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER: DURING: 10 / AFTER: --
LOGGED BY: JH/MK/NS	SCREEN INTERVAL: 5-15 / BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0					ASPHALT	
1				9.5	GRAVEL with sand, brown, moist	
2						
3				8.8	Fine CLAYEY SILTY SAND, brown, moist	
4						
5				2.9		No odors or staining noted in soil column
6						
7				3.6		
8	SO-B45-8-10-071420					
9				0.0	SILTY SAND, brown, moist to wet	
10						
11				0.0		
12						
13				0.0		
14						
15				0.0		



TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS

1-inch diameter schedule 40 PVC casing

1-inch diameter schedule 40, 5-foot long, 0.010 slot size, PVC screen

Groundwater sample collected from temporary monitoring well

Sunset Auburn

Auburn, WA

BORING LOCATION: B46	DATE STARTED: 6/7/2022
DRILLING CONTRACTOR: Holocene	
DRILLING METHOD: Direct Push	
DRILLING EQUIPMENT: Geoprobe	
LOGGED BY: JH	

PIONEER TECHNOLOGIES CORPORATION

Log of Soil Boring No. B46

DEPTH TO WATER (ft.): 6	TOTAL DEPTH (ft.): 15
SCREEN INTERVAL: --	BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0					Portland Cement	
1	SO-B46-1-2			22.2	FILL - Fine to Coarse GRAVEL and SAND, gray, moist	Hydrocarbon odor from 1-13'
2						
3				62.7	SILTY CLAY, gray	
4						
5				1,747.0		Strong sheen on soil from 9-12'
6	SO-B46-6-7					2-inch thick silt seam at 6.5'
7				1,935.0	Fine SILTY SAND, gray, moist to wet	
8						
9				3,057.0		
10	SO-B46-10-11				SANDY SILT, gray, wet	
11				3,160.0		
12						
13				344.0	Fine SILTY SAND, gray, wet	
14	SO-B46-14-15					
15				5.6		

TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS

No temporary well installed.

Methane Notes:

Methane down hole >99% Methane in ambient air at 0.2% at top of boring

Sunset Auburn

Auburn, WA

BORING LOCATION: B47	DATE STARTED: 6/7/2022
DRILLING CONTRACTOR: Holocene	
DRILLING METHOD: Direct Push	
DRILLING EQUIPMENT: Geoprobe	
LOGGED BY: JH	

PIONEER TECHNOLOGIES CORPORATION

Log of Soil Boring No. B47

DEPTH TO WATER (ft.): 7	TOTAL DEPTH (ft.): 15
SCREEN INTERVAL: --	BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0					Portland Cement	
1				1.7	FILL - Fine to Coarse SAND and GRAVEL, gray and brown, moist	
2	SO-B47-2-3					Black staining from 2-2.5'
3				124.0	SILTY CLAY with sand, gray	Hydrocarbon odor from 2-10'
4						
5				1,179.0		
6	SO-B47-6-7					
7				1,384.0	CLAYEY SILT with sand, gray, moist to wet	
8						
9				34.0		
10						
11	SO-B47-11-12			10.1	Fine SILTY SAND, gray, wet	
12						
13				1.1	CLAYEY SILT with sand, gray, wet	
14					Fine SILTY SAND, gray, wet	
15				0.7		

TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS

No temporary well installed.

Methane Notes:

Methane down hole 72% peak, dropped to 3.9%

Sunset Auburn

Auburn, WA

BORING LOCATION: B48	DATE STARTED: 6/7/2022
DRILLING CONTRACTOR: Holocene	
DRILLING METHOD: Direct Push	
DRILLING EQUIPMENT: Geoprobe	
LOGGED BY: JH	

PIONEER TECHNOLOGIES CORPORATION

Log of Soil Boring No. B48

DEPTH TO WATER (ft.): 6	TOTAL DEPTH (ft.): 15
SCREEN INTERVAL: --	BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0					Portland Cement	
1					FILL - Fine to Coarse SAND and GRAVEL, gray, moist	
2	SO-B48-2-3			25.2	SILTY CLAY, gray	Hydrocarbon odor from 2-10.5'
3				36.9		
4						
5				66.2	Fine SILTY SAND with occasional thin strings of silt, gray, moist to wet	
6	SO-B48-6-7					
7				103.0		
8						
9	SO-B48-9-10			328.0	SANDY SILT, gray, moist	
10						
11	SO-B48-11.5-12			173.0		
12				26.1		No recovery from 12-15' due to soft material
13				--	Fine SILTY SAND, gray, wet	
14						
15				--		

TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS

No temporary well installed.

Methane Notes:

No methane detected

Sunset Auburn

Auburn, WA

BORING LOCATION: B49	DATE STARTED: 6/7/2022
DRILLING CONTRACTOR: Holocene	
DRILLING METHOD: Direct Push	
DRILLING EQUIPMENT: Geoprobe	
LOGGED BY: JH	

PIONEER TECHNOLOGIES CORPORATION

Log of Soil Boring No. B49

DEPTH TO WATER (ft.): 6	TOTAL DEPTH (ft.): 15
SCREEN INTERVAL: --	BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0					Portland Cement	
1				0.0	FILL - Fine to Coarse SAND and GRAVEL, brown, moist	
2	SO-B48-2-3					
3				46.1	SILTY CLAY with sand, gray	Hydrocarbon odor from 2.5-9.5'
4						
5				75.0		
6	SO-B49-6-7				SANDY SILT, gray, moist to wet	
7				194.0		
8					Fine SILTY SAND, gray, wet	
9				133.0		
10	SO-B49-10-11				SILT with sand, gray, wet	
11				40.8		
12						
13				0.3	Fine SILTY SAND, gray, wet	
14	SO-B49-14-15					
15				4.1		

TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS

No temporary well installed.

Methane Notes:

Methane in hole >99%

Methane in ambient air at 0.0% at top of boring

Sunset Auburn

Auburn, WA

PIONEER TECHNOLOGIES CORPORATION

BORING LOCATION: B50	DATE STARTED: 6/7/2022
DRILLING CONTRACTOR: Holocene	
DRILLING METHOD: Direct Push	**Log of Soil Boring No. B50**
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER (ft.): 6 / TOTAL DEPTH (ft.): 15
LOGGED BY: JH	SCREEN INTERVAL: -- / BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	Sample	Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0					Portland Cement	Slight hydrocarbon odor from 3-7'
1				0.0	FILL - Fine to Coarse SAND, light brown, moist	
2	SO-B50-2-3				Fine SILTY SAND, gray, moist	
3				10.3		
4					SILTY CLAY with sand, gray	
5	SO-B50-5-6			10.8		
6					SILT with sand, gray, moist to wet	
7				8.7	Fine SILTY SAND, gray, wet	
8						
9	SO-B50-9-10			0.1	SANDY SILTY, gray, wet	
10						
11				2.3	Fine SILTY SAND, gray, wet	
12	SO-B50-12-13				SANDY SILT, gray, wet	
13				0.0		
14					Fine SILTY SAND, gray, wet	
15				0.0		

TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS

No temporary well installed.

Methane Notes:

11.1% methane peak after boring complete, steady at 6%

Sunset Auburn

Auburn, WA

BORING LOCATION: B51	DATE STARTED: 6/7/2022
DRILLING CONTRACTOR: Holocene	
DRILLING METHOD: Direct Push	
DRILLING EQUIPMENT: Geoprobe	
LOGGED BY: JH	

PIONEER TECHNOLOGIES CORPORATION

Log of Soil Boring No. B51

DEPTH TO WATER (ft.): 4.5	TOTAL DEPTH (ft.): 15
SCREEN INTERVAL: --	BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0					ASPHALT	
1	SO-B51-1-2			0.0	FILL - Fine to Coarse SAND with gravel, gray and brown, moist	
2					CLAYEY SILT with sand, gray, moist to wet	
3				48.7		Hydrocarbon odor from 3-8.5'
4	SO-B51-4-5					
5				1,382.0		
6					SILT, gray, moist to wet	
7	SO-B51-7-8			1,471.0		
8						
9				233.0		
10						
11				7.5		
12	SO-B51-12-13				Fine SILTY SAND, gray, wet	
13				2.4		
14						
15				0.9		

TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS	
No temporary well installed.	Methane Notes: No methane detected

Sunset Auburn

Auburn, WA

PIONEER TECHNOLOGIES CORPORATION

BORING LOCATION: B52	DATE STARTED: 6/7/2022
DRILLING CONTRACTOR: Holocene	
DRILLING METHOD: Direct Push	**Log of Soil Boring No. B52**
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER (ft.): 6 / TOTAL DEPTH (ft.): 15
LOGGED BY: JH	SCREEN INTERVAL: -- / BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0					ASPHALT	Hydrocarbon odor from 1.5-10'
1	SO-B52-1-2			7.2	FILL - Fine SAND, brown, moist	
2					SILTY CLAY, olive gray	
3				25.4		
4						
5	SO-B52-5-6			28.2		
6					SANDY SILT and SILTY SAND, gray, moist to wet	
7	SO-B52-7-8			637.0		
8						
9				395.0		
10						
11	SO-B52-11-12			0.0	Fine SILTY SAND, gray, wet	
12						
13				0.0		
14					SANDY SILT, gray, wet	
15				0.0		

TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS

No temporary well installed.

Methane Notes:

No methane detected

Sunset Auburn

Auburn, WA

BORING LOCATION: B53	DATE STARTED: 6/7/2022
DRILLING CONTRACTOR: Holocene	
DRILLING METHOD: Direct Push	
DRILLING EQUIPMENT: Geoprobe	
LOGGED BY: JH	

PIONEER TECHNOLOGIES CORPORATION

Log of Soil Boring No. B53

DEPTH TO WATER (ft.): 5	TOTAL DEPTH (ft.): 15
SCREEN INTERVAL: --	BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0					ASPHALT	
1				11.1	FILL - Fine to Coarse SAND with gravel, brown, moist	Hydrocarbon odor from 1-9'
2	SO-B53-2-3					
3				56.3	CLAYEY SILT with sand, gray, moist to wet	
4	SO-B53-4-5					
5				18.2		
6						
7	SO-B53-7-8			143.1	CLAYEY SILT, gray, wet	
8						
9				0.4		
10	SO-B53-10-11					
11				1.1		
12					Fine SILTY SAND, gray, wet	
13				0.0		
14						
15				0.0		

TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS

No temporary well installed.

Methane Notes:

No measurable methane

Sunset Auburn

Auburn, WA

PIONEER TECHNOLOGIES CORPORATION

BORING LOCATION: B54	DATE STARTED: 6/7/2022
DRILLING CONTRACTOR: Holocene	
DRILLING METHOD: Direct Push	**Log of Soil Boring No. B54**
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER (ft.): 6 / TOTAL DEPTH (ft.): 15
LOGGED BY: JH	SCREEN INTERVAL: -- / BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	Sample	Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0					ASPHALT	
1				3.5	FILL - Fine to Coarse SAND with gravel, gray, moist	
2	SO-B54-2-3					Hydrocarbon odor from 2.5-12'
3				109.2		
4					CLAYEY SILT with sand, gray, moist to wet	
5	SO-B54-5-6			1,802.0		
6						
7				1,516.0		
8					SILTY SAND with clay, gray, wet	
9	SO-B54-9-10			1,470.0		
10						
11				24.1	SILT, gray, wet	
12						
13				42.4	Fine SILTY SAND, gray, wet	
14	SO-B54-14-15					
15				8.0		

TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS

No temporary well installed.

Methane Notes:

No methane detected

Sunset Auburn

Auburn, WA

BORING LOCATION: B55	DATE STARTED: 6/7/2022
DRILLING CONTRACTOR: Holocene	
DRILLING METHOD: Direct Push	
DRILLING EQUIPMENT: Geoprobe	
LOGGED BY: JH	

PIONEER TECHNOLOGIES CORPORATION

Log of Soil Boring No. B55

DEPTH TO WATER (ft.): 6	TOTAL DEPTH (ft.): 15
SCREEN INTERVAL: --	BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0					ASPHALT	Hydrocarbon odor from 1.5-10.5'
1	SO-B55-1-2			27.4	FILL - Fine to Coarse SAND with gravel, gray, moist	
2					SILTY CLAY, grayish brown	
3				1,078.0		
4						
5	SO-B55-5-6			1,958.0	Fine SILTY SAND, dark gray, moist to wet	
6						
7				1,640.0		
8				777.0	SILT, gray, wet	
9	SO-B55-9-10			1,151.0		
10						
11				187.0	Fine SILTY SAND, gray, wet	
12						
13				90.2		
14	SO-B55-14-15				CLAYEY SILT, gray, wet	
15				9.1		

TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS

No temporary well installed.

Methane Notes:

No methane detected

Sunset Auburn

Auburn, WA

PIONEER TECHNOLOGIES CORPORATION

BORING LOCATION: B56	DATE STARTED: 6/7/2022
DRILLING CONTRACTOR: Holocene	
DRILLING METHOD: Direct Push	**Log of Soil Boring No. B56**
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER (ft.): 6 / TOTAL DEPTH (ft.): 15
LOGGED BY: JH	SCREEN INTERVAL: -- / BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0					TOPSOIL	
1				12.4	FILL - Fine to Coarse SAND with gravel, brown, moist	
2	SO-B56-2-3				SILTY SAND with clay, trace root fibers	Hydrocarbon odor from 2-8'
3				99.4		
4						
5	SO-B56-5-6			1,241.0	CLAYEY SILT with sand, gray	Heavy sheen on soil from 5-8'
6						
7				760.0		
8	SO-B56-8-9				SILT, gray, wet	
9				377.0		
10	SO-B56-6-7					
11				2.0		
12					Fine SILTY SAND, gray, wet	
13				2.5		
14						
15				0.9		

TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS

No temporary well installed.

Methane Notes:

No methane reading completed. Borehole was filled by driller prior to accessing.

Sunset Auburn

Auburn, WA

BORING LOCATION: B57	DATE STARTED: 6/7/2022
DRILLING CONTRACTOR: Holocene	
DRILLING METHOD: Direct Push	
DRILLING EQUIPMENT: Geoprobe	
LOGGED BY: JH	

PIONEER TECHNOLOGIES CORPORATION

Log of Soil Boring No. B57

DEPTH TO WATER (ft.): 5.25	TOTAL DEPTH (ft.): 5.5
SCREEN INTERVAL: --	BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0					ASPHALT	
1	SO-B57-1-2			2.0		Hydrocarbon odor from 1-4.5'
2				72.3	FILL - CLAYEY SAND with gravel, brown and gray, moist	
3	SO-B57-3-4			177.0		
4				497.0		Refusal in building debris at 5.5'
5				6.4	FILL - Fine to Coarse GRAVEL and SAND with brick and concrete, gray, moist to wet	

TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS

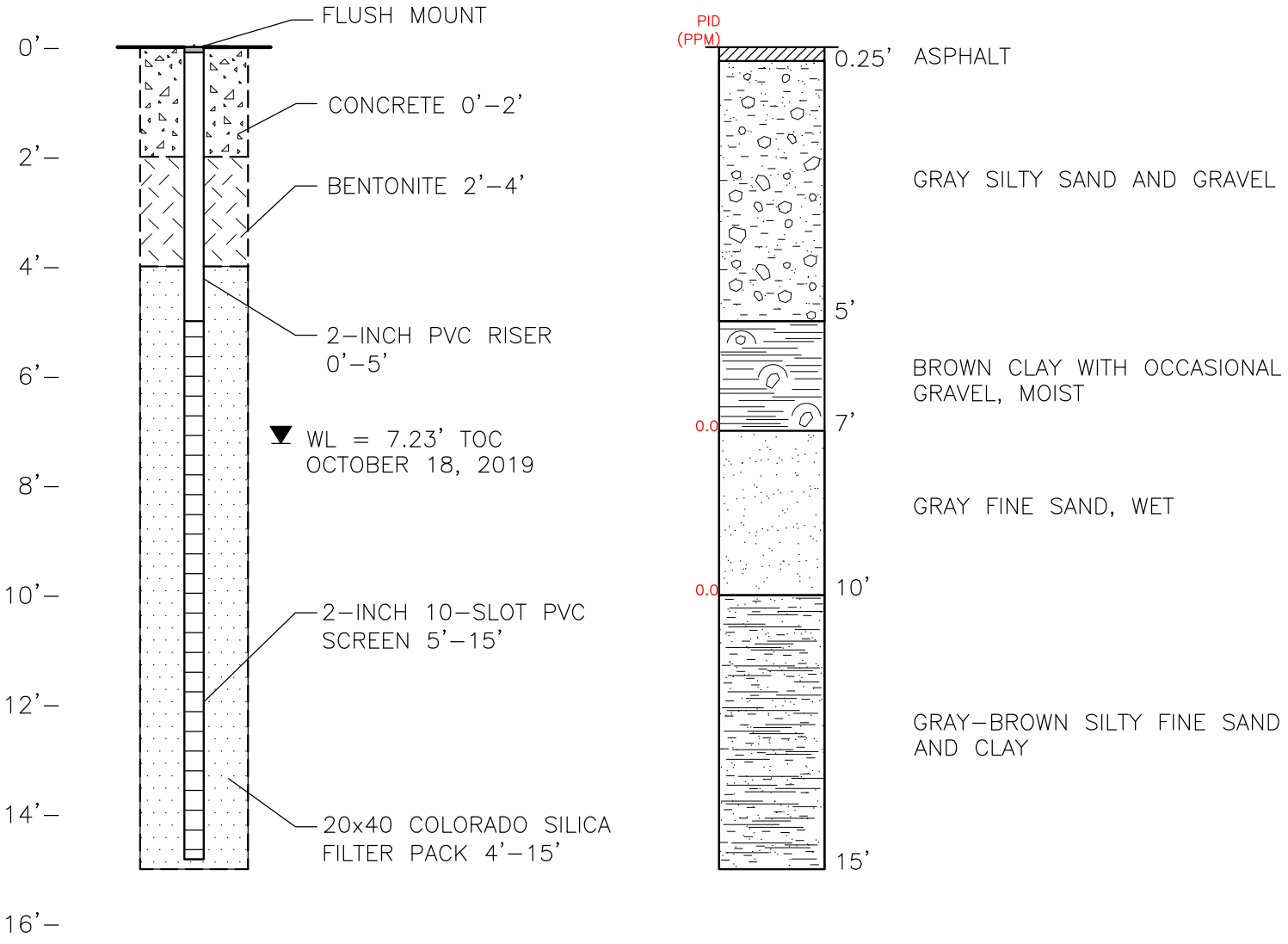
No temporary well installed.

Methane Notes:

No methane detected

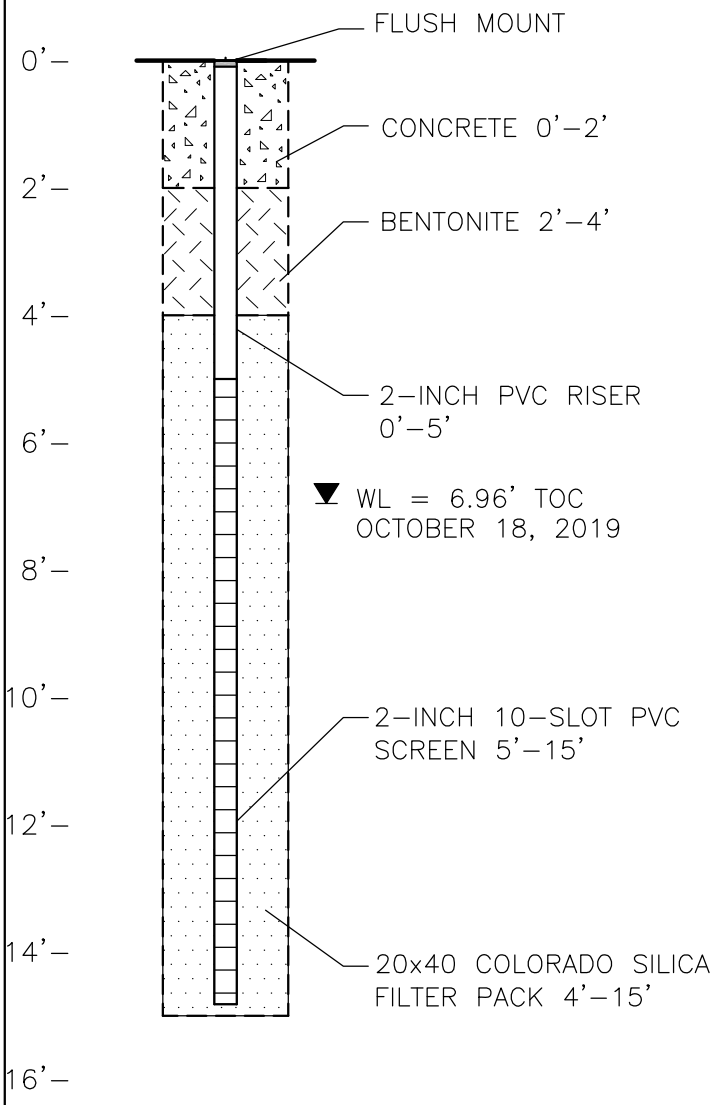
Construction Detail

Geologic Log

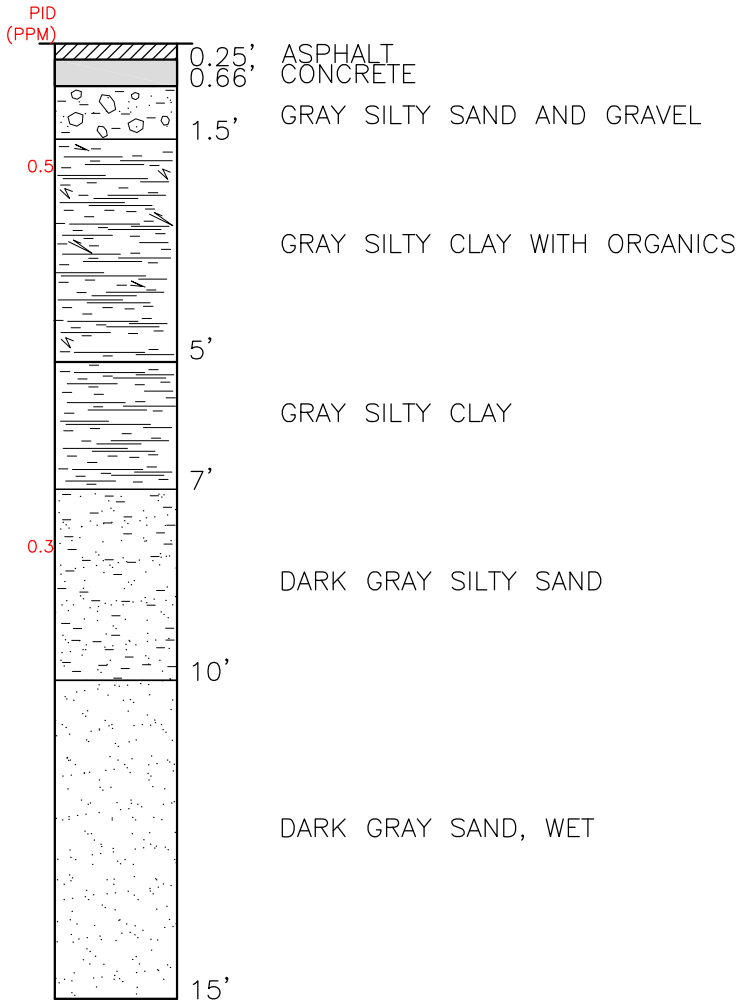


ROBINSON NOBLE	PM: JFH November 2019 3350-001B	King County T 21 N/R 05 E - 06 Well ID: BMF-558	Figure 6A Construction and Geologic Log for Monitor Well 1 Sunset Kia-Mitsubishi: Subsurface Investigation

Construction Detail



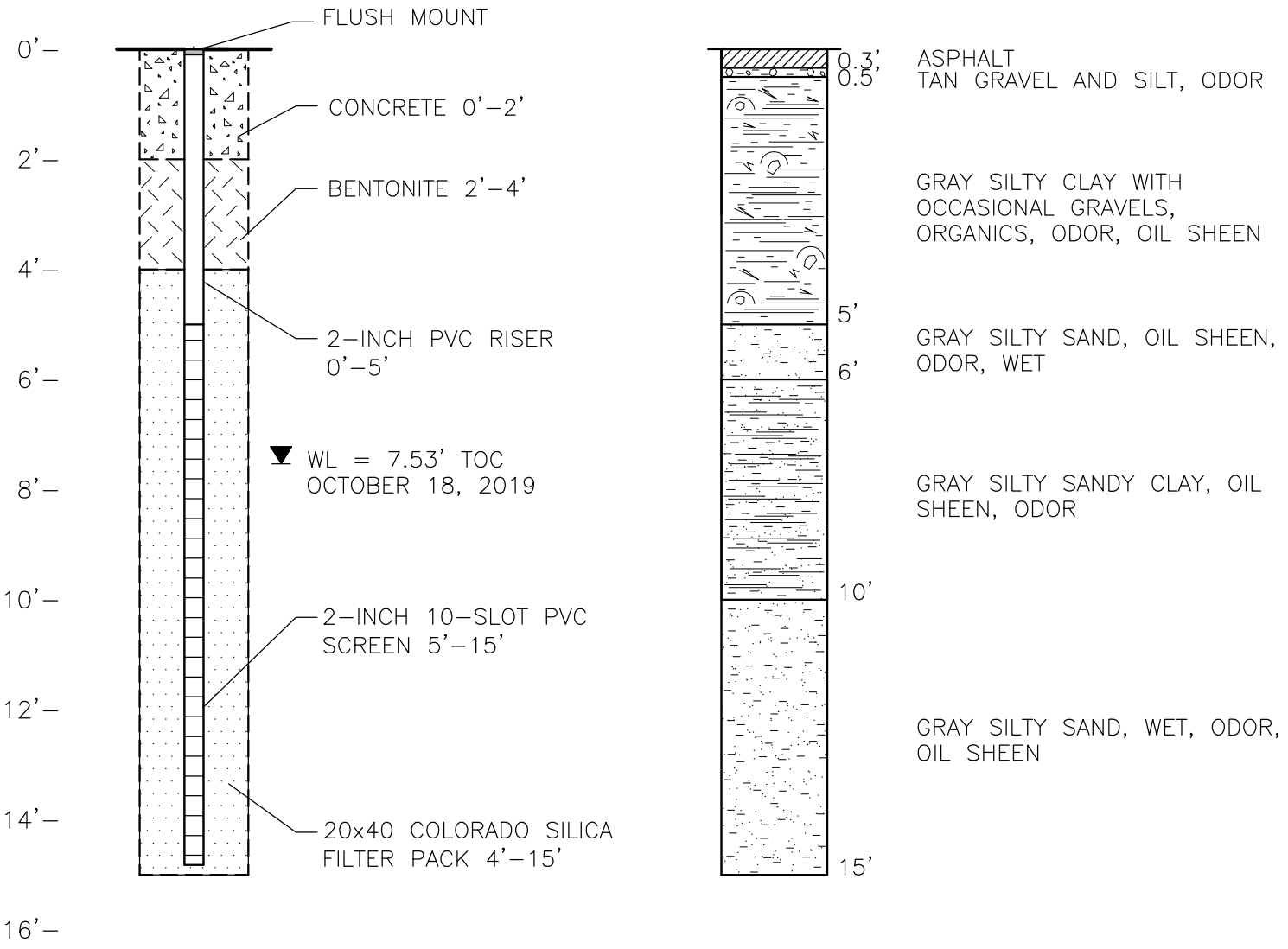
Geologic Log



ROBINSON NOBLE	PM: JFH November 2019 3350-001B	King County T 21 N/R 05 E - 06 Well ID: BMF-559	Figure 6B Construction and Geologic Log for Monitor Well 2 Sunset Kia-Mitsubishi: Subsurface Investigation

Construction Detail

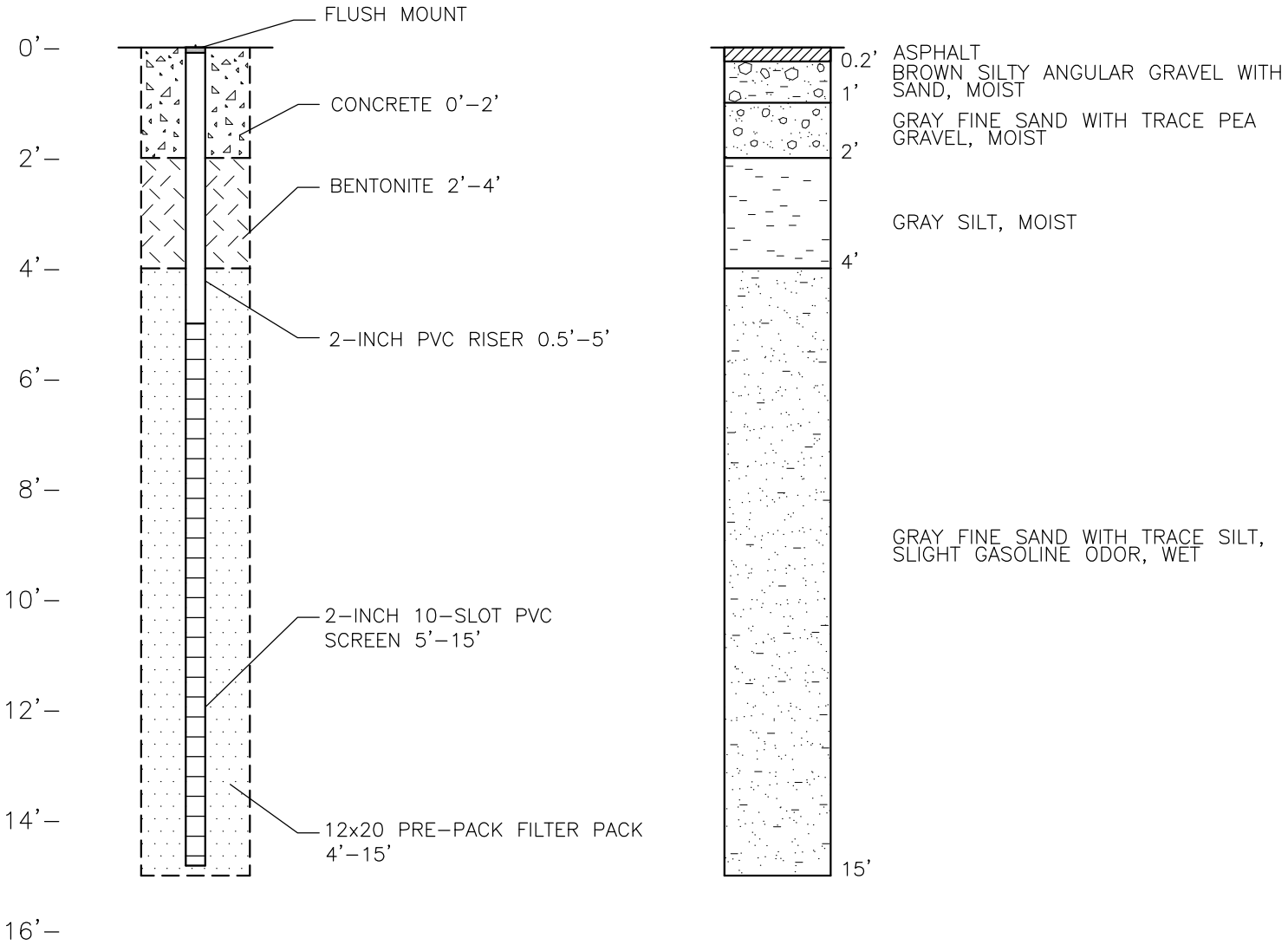
Geologic Log



ROBINSON NOBLE	PM: JFH November 2019 3350-001B	King County T 21 N/R 05 E - 06 Well ID: BMF-560	Figure 6C Construction and Geologic Log for Monitor Well 3 Sunset Kia-Mitsubishi: Subsurface Investigation

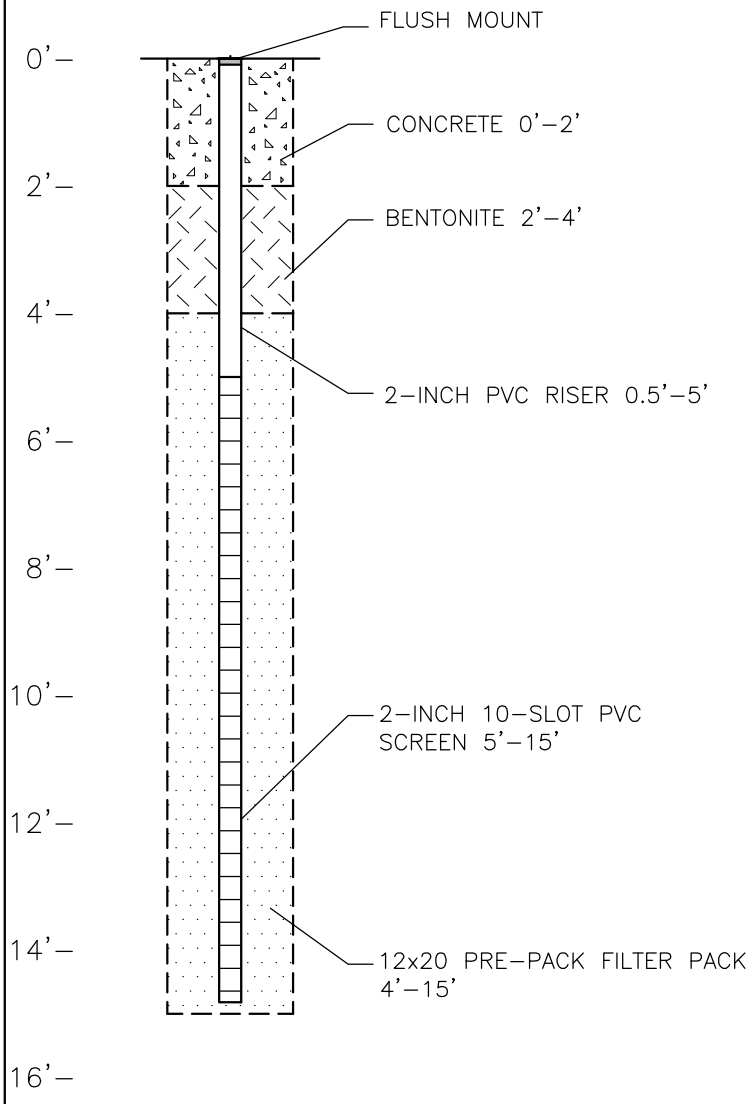
Construction Detail

Geologic Log

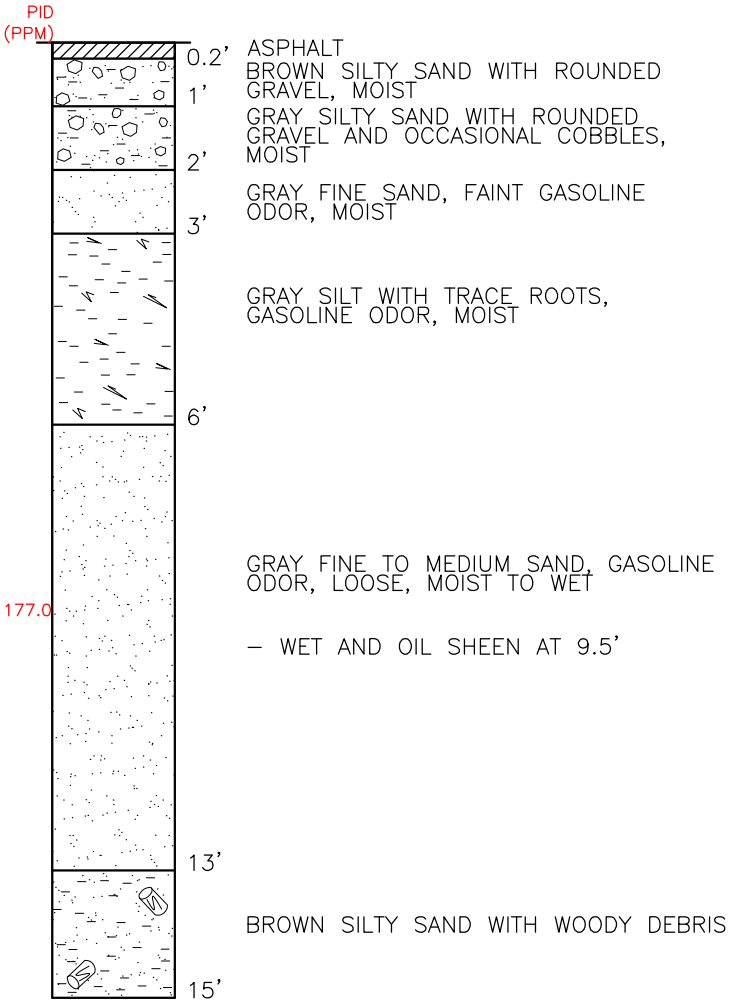


ROBINSON NOBLE	PM: JFH March 2020 3350-001C	King County T 21 N/R 05 E - 06 Well ID: BME-551	Figure 4 Construction and Geologic Log for Monitor Well 5 Sunset Kia-Mitsubishi: Additional Remedial Investigation

Construction Detail



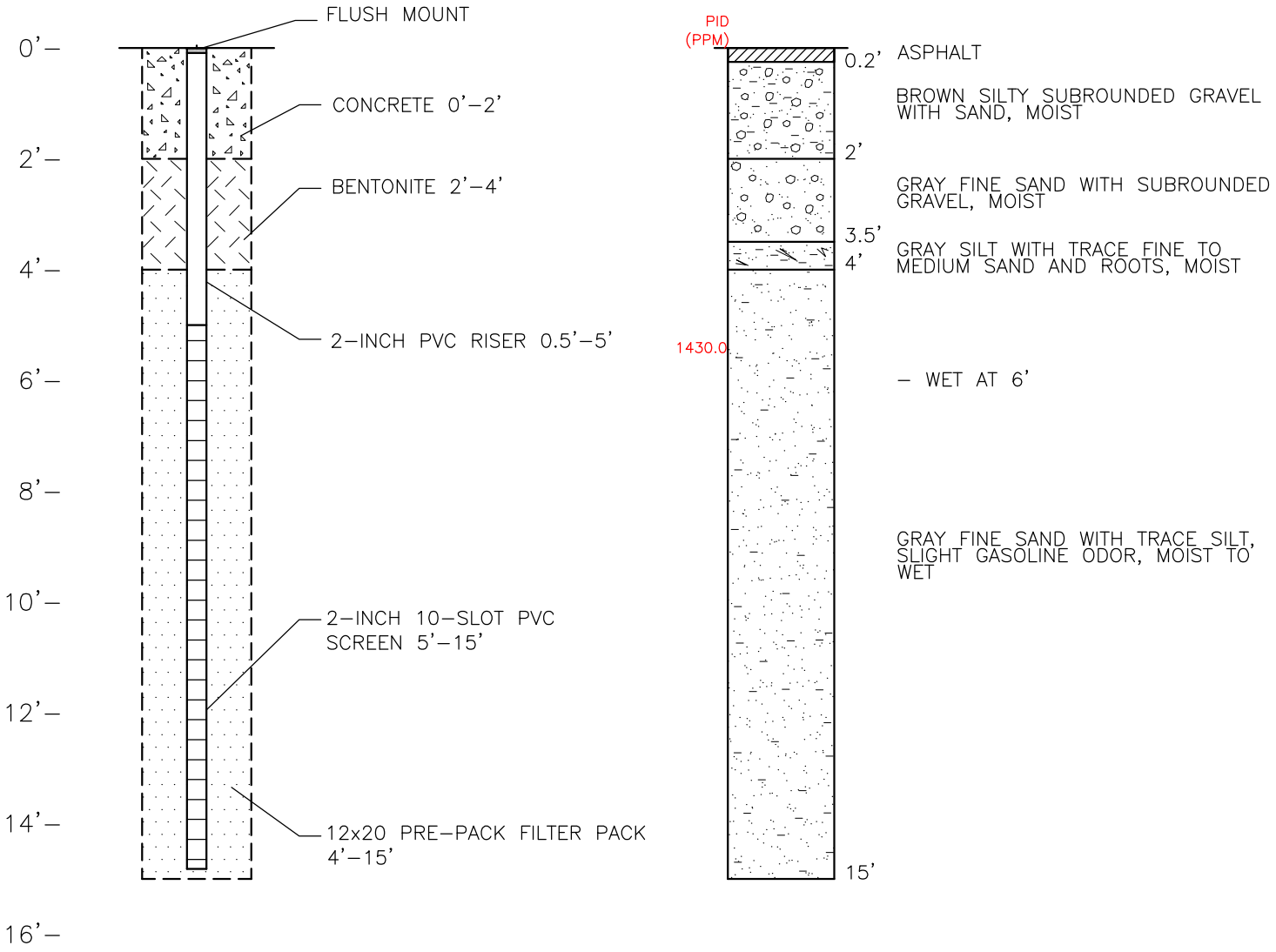
Geologic Log



ROBINSON NOBLE	PM: JFH March 2020 3350-001C	King County T 21 N/R 05 E - 06 Well ID: BME-552	Figure 5 Construction and Geologic Log for Monitor Well 6 Sunset Kia-Mitsubishi: Additional Remedial Investigation

Construction Detail

Geologic Log



ROBINSON NOBLE	PM: JFH March 2020 3350-001C	King County T 21 N/R 05 E - 06 Well ID: BME-553	Figure 6 Construction and Geologic Log for Monitor Well 7 Sunset Kia-Mitsubishi: Additional Remedial Investigation

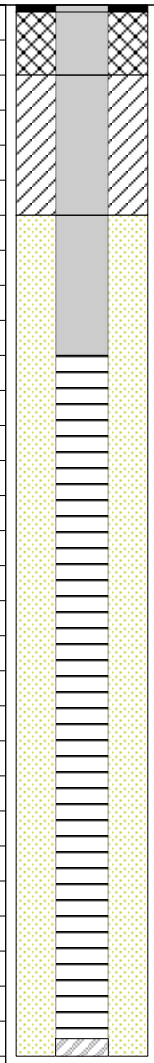
PROJECT: **Sunset Auburn Phase II ESA**
Auburn, WA

Log of MW-8

BORING LOCATION: MW-8		GROUND SURFACE ELEVATION AND DATUM (NAVD88): 54.08	
DRILLING CONTRACTOR: ESN		DATE STARTED: 7/14/20	DATE FINISHED: 7/14/20
DRILLING METHOD: Direct Push		TOTAL DEPTH (ft.): 20	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: HSA		DEPTH TO WATER: DURING: 8	AFTER: --
LOGGED BY: JH/MK/NS		SCREEN INTERVAL: 5-15	BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0–1	SO-MW-8-6-8-071420			0.0	FILL - SAND with gravel, brown and gray, moist	No odors or staining noted in soil column
1–2					CLAYEY SAND, trace wood, brown	
2–5				0.0	Fine SAND, brown, moist	
5–6				0.0		
6–7					CLAY, gray	
7–13				0.0	SILTY SAND, dark gray, moist to wet	
13–19				0.0		
19–20				0.0		

WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



Cover
Cement
Bentonite
Casing
Screen
Sand
End Cap

Cover: 8-inch diameter, flush-mount steel well cover
Cement: Portland cement concrete
Bentonite: Hydrated granular bentonite
Casing: 2-inch diameter schedule 40 PVC casing
Screen: 2-inch diameter schedule 40, 0.010 slot size, PVC screen

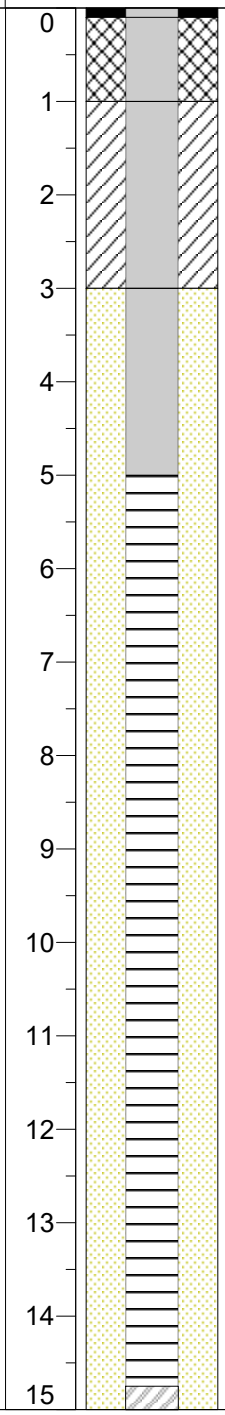
PROJECT: **Sunset Auburn Phase II ESA**
Auburn, WA

Log of MW-9

BORING LOCATION: MW-9		GROUND SURFACE ELEVATION AND DATUM (NAVD88): 54.25	
DRILLING CONTRACTOR: ESN		DATE STARTED: 7/14/20	DATE FINISHED: 7/14/20
DRILLING METHOD: Direct Push		TOTAL DEPTH (ft.): 15	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: HSA		DEPTH TO WATER: DURING: 8	AFTER: --
LOGGED BY: JH/MK/NS		SCREEN INTERVAL: 5-15	BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0	SO-MW-9-11-13-071420			0.0	GRAVELLY SILTY SAND, brownish-gray, moist	No odors or staining noted in soil column
1					SILTY CLAY, brown	
2				0.0		
3				0.0		
4				0.0		
5				0.0		
6				0.0		
7				0.0	Fine SAND, brown, moist to wet	
8				0.0		
9				0.0		
10				0.0		
11				4.0		
12						
13				2.0	WOOD	
14					Fine CLAYEY SILTY SAND, dark gray, wet	
15				1.0		

WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



Cover
Cement
Bentonite
Casing
Screen
Sand
End Cap

Cover: 8-inch diameter, flush-mount steel well cover
Cement: Portland cement concrete
Bentonite: Hydrated granular bentonite
Casing: 2-inch diameter schedule 40 PVC casing
Screen: 2-inch diameter schedule 40, 0.010 slot size, PVC screen

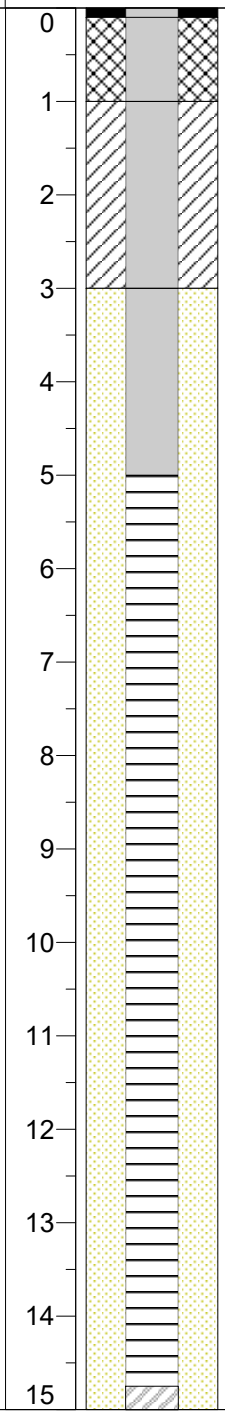
PROJECT: **Sunset Auburn Phase II ESA**
Auburn, WA

Log of MW-10

BORING LOCATION: MW-10		GROUND SURFACE ELEVATION AND DATUM (NAVD88): 53.88	
DRILLING CONTRACTOR: ESN		DATE STARTED: 7/14/20	DATE FINISHED: 7/14/20
DRILLING METHOD: Direct Push		TOTAL DEPTH (ft.): 15	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: HSA		DEPTH TO WATER: DURING: 8	AFTER: --
LOGGED BY: JH/MK/NS		SCREEN INTERVAL: 5-15	BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0	SO-MW-10-6-8-071420				ASPHALT	No odors or staining noted in soil column
1				0.0	CLAYEY SILT, brown, moist	
2						
3				0.0		
4					SILTY SAND, brown, moist	
5				0.0		
6						
7				0.0	CLAYEY SILT, gray, moist to wet	
8						
9				0.0		
10					Fine SILTY SAND, gray, moist to wet	
11				0.0		
12						
13				0.0	Fine to Coarse SILTY SAND, dark gray, wet	
14						
15				0.0		

WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



Cover
Cement
Bentonite
Casing
Screen
Sand
End Cap

Cover: 8-inch diameter, flush-mount steel well cover
Cement: Portland cement concrete
Bentonite: Hydrated granular bentonite
Casing: 2-inch diameter schedule 40 PVC casing
Screen: 2-inch diameter schedule 40, 0.010 slot size, PVC screen

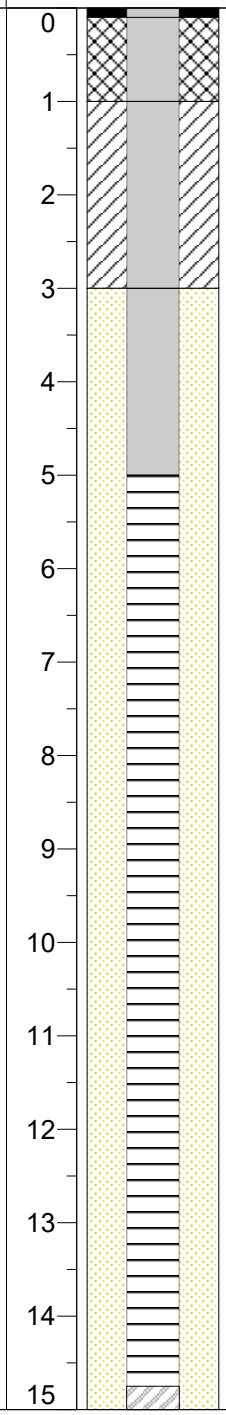
PROJECT: **Sunset Auburn Phase II ESA**
Auburn, WA

Log of MW-11

BORING LOCATION: MW-11		GROUND SURFACE ELEVATION AND DATUM (NAVD88): 54.18	
DRILLING CONTRACTOR: ESN		DATE STARTED: 7/14/20	DATE FINISHED: 7/14/20
DRILLING METHOD: Direct Push		TOTAL DEPTH (ft.): 15	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: HSA		DEPTH TO WATER: DURING: 8	AFTER: --
LOGGED BY: JH/MK/NS		SCREEN INTERVAL: 5-15	BOREHOLE BACKFILL: Bentonite

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS
0						
1				84.0	ASPHALT	
2						
3	SO-MW-11-3-5-071420			373.0		Hydrocarbon odor at 3.5'
4						
5				34.0		
6						
7				28.0		
8					Fine SILTY SAND, trace wood, gray, moist to wet	
9	SO-MW-11-9-11-071420			530.0		Hydrocarbon odor at 9'
10						
11				425.0		
12						
13						
14						
15				63.0		

WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



Cover
Cement
Bentonite
Casing
Screen
Sand
End Cap

Cover: 8-inch diameter, flush-mount steel well cover
Cement: Portland cement concrete
Bentonite: Hydrated granular bentonite
Casing: 2-inch diameter schedule 40 PVC casing
Screen: 2-inch diameter schedule 40, 0.010 slot size, PVC screen

PROJECT: **Sunset Auburn Phase II ESA**
Auburn, WA

Log of MW-12

BORING LOCATION: MW-12	GROUND SURFACE ELEVATION AND DATUM (NAVD88): Not measured
DRILLING CONTRACTOR: ESN	DATE STARTED: 7/14/20 / DATE FINISHED: 7/14/20
DRILLING METHOD: Direct Push	TOTAL DEPTH (ft.): / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: HSA	DEPTH TO WATER: DURING: 8 / AFTER: --
LOGGED BY: JH/MK/NS	SCREEN INTERVAL: 5-15 / BOREHOLE BACKFILL:

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Litho.	PID Reading	DESCRIPTION	BORING REMARKS	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0	SO-MW-12-18-20-071420				ASPHALT		No Temporary Well Installed
1				1.4	CLAYEY SILT, dark gray, moist		
2							
3				13.0			
4					Very fine SILTY SAND, dark gray, moist		
5				97.0			
6							
7				102.0	CLAYEY SILT, greenish-gray, wet	Odor at 6.5'	
8					Very fine SILTY SAND, dark gray, wet	Mild odor 7.5'-9'	
9				7.7			
10					Fine SAND, dark gray, wet		
11				34.6			
12							
13				0.7	Very fine SANDY CLAYEY SILT, dark gray-brown, wet		
14					Medium SAND, dark gray, wet		
15				0.0	SILTY CLAYEY very fine sand, dark gray, wet		
16							
17				0.0			
18						Second zone begins	
19				0.0			
20							
21				1.2			
22							
23				2.0			
24							
25				1.2	Clean medium SAND, dark gray, wet		
26							
27				1.3			
28							
29				0.0			
30							
31				14.0			
32							
33				16.0			
34							
35				62.0	GRAVEL with clean medium sand, dark gray, wet		
36							
37				0.4	Clean SAND with trace gravel, dark gray, wet		
38							
39				0.3			
40							

Appendix C

GPRS SUBSURFACE SCANNING SOLUTIONS

Subsurface Investigation for Storage Tanks/Anomalies

Prepared For: Pioneer Technologies

Prepared By:
Jesse Moorhouse
Senior Project Manager-Seattle, WA
7/1/2020

GPRS SUBSURFACE SCANNING SOLUTIONS

July 7th, 2020

Pioneer Technologies
Attn: Joel Hecker
Site: 3317 Auburn Way N., Auburn, WA

We appreciate the opportunity to provide this report for our work completed on 7/1/19 at the above address in Auburn, WA.

PURPOSE

The purpose of this project was to search for any underground storage tanks (UST's) or UST-related piping remaining on the property. We also searched for utilities around 20 soil boring locations.

EQUIPMENT

- **400 MHz GPR Antenna.** The antenna is mounted in a stroller frame which rolls over the surface. The surface needs to be reasonably smooth and unobstructed in order to obtain readable scans. Obstructions such as curbs, landscaping, and vegetation will limit the feasibility of GPR. The data is displayed on a screen and marked in the field in real time. GPR works by sending pulses of energy into a material and recording the strength and the time required for the return of the reflected signal. Reflections are produced when the energy pulses enter into a material with different electrical properties from the material it left. The strength of the reflection is determined by the contrast in signal speed between the two materials. The total depth achieved can be as much as 8' or more with this antenna but can vary widely depending on the conductivity of the materials. Depths provided should always be treated as estimates as their accuracy can be affected by multiple factors. For more information, please visit: Link
- **Electromagnetic Pipe Locator.** The EM locator can detect the electromagnetic fields from live power or radio frequency signals. It can also be used in conjunction with a transmitter to connect directly to accessible, metallic pipes, risers, or tracer wires. A current is sent through the pipe or tracer wire at a specific frequency and the resulting EM field can then be detected by the receiver. The receiver is moved over the surface without coming in contact with the ground so it is not affected by terrain. Depths provided should always be treated as estimates as their accuracy can be affected by multiple factors. Depths achieved can be as much as 20' depending on the type of signal being traced or methods used. For more information, please visit: Link
- **Magnetometer.** The magnetometer detects the magnetic field of a ferromagnetic object. It responds to the difference in the magnetic field between two sensors. It is interpreted in the field by listening to changes in frequency as emitted by a speaker on the device. For more information, please visit: Link

PROCESS

The EM pipe locator was used to connect to accessible, traceable pipes that may be tank-related such as vent pipes or product lines. A current is induced onto the pipe which creates an electromagnetic field that can be traced using the receiver. We can then attempt to trace these pipes to their origin or end point and paint or flag their locations.

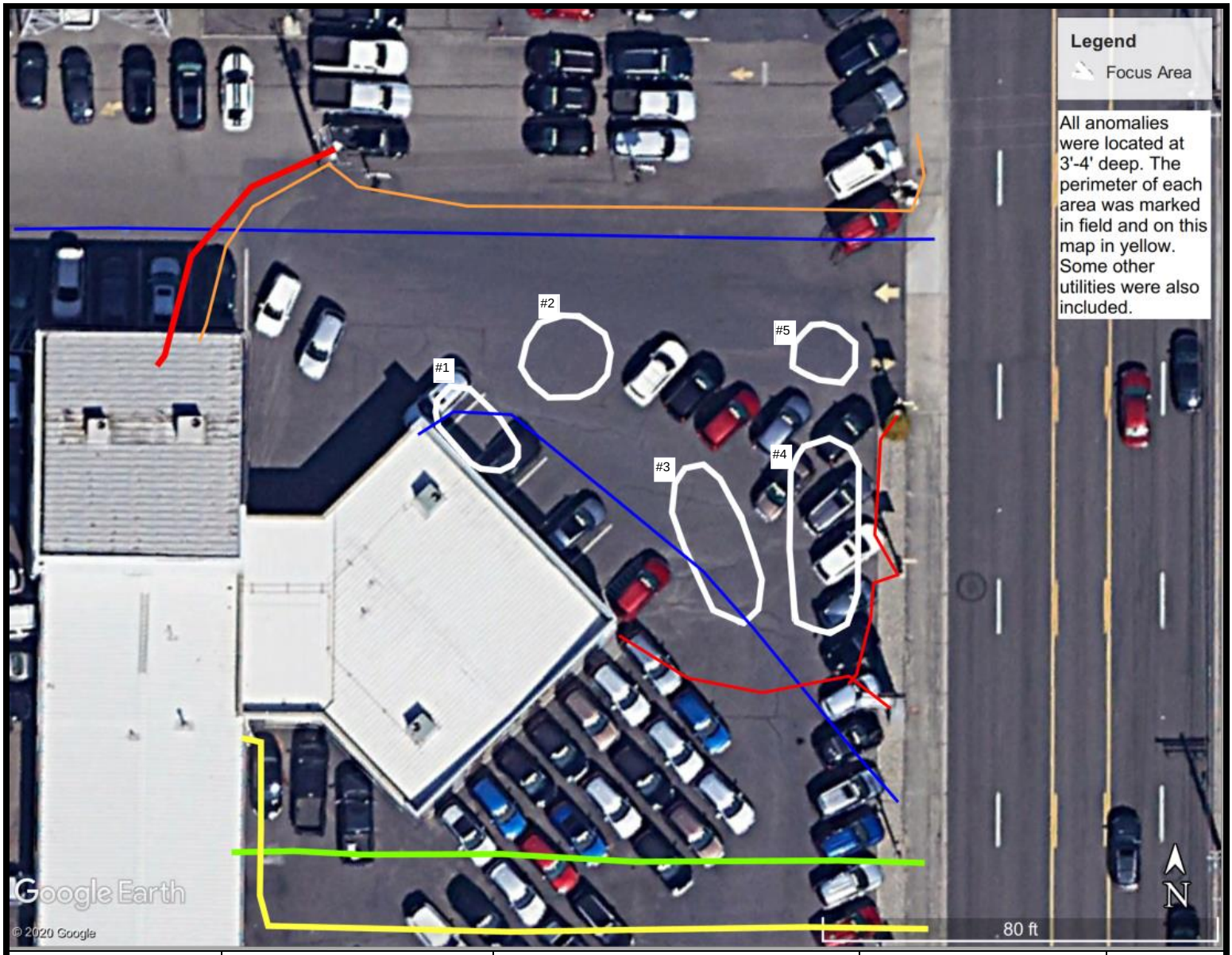
Initial GPR scans were collected in order to evaluate the data and calibrate the equipment. Based on these findings, a scanning strategy is formed, typically consisting of scanning the entire area in a grid with 3'-5' scan spacing in order to locate any potential UST's that may remain at the site. The GPR data is interpreted in real time and anomalies in the data are located and marked on the surface along with their depths using spray paint, pin flags, etc. Depths are dependent on the dielectric of the materials being scanned so depth accuracy can vary throughout a site. Relevant scan examples were saved and will be provided in this report.

LIMITATIONS

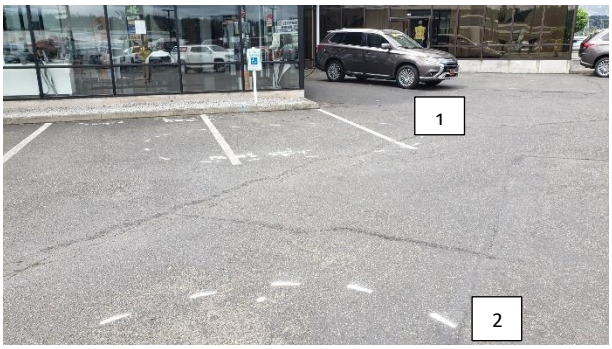
Please keep in mind that there are limitations to any subsurface investigation. The equipment may not achieve maximum effectiveness due to soil conditions, above ground obstructions, reinforced concrete, and a variety of other factors. No subsurface investigation or equipment can provide a complete image of what lies below. Our results should always be used in conjunction with as many methods as possible including consulting existing plans and drawings, exploratory excavation or potholing, visual inspection of above ground features, and utilization of services such as One Call/811.

FINDINGS

We found that the soil allowed for GPR depth penetration of 4' in most areas. We were able to locate power, water, sewer, gas, and communication utilities on the campus. 19 soil borings were positioned away from utilities after the UST search was completed. After an extensive search of the grounds using both the magnetometer and 400 MHz GPR Antenna we were able to find evidence of 5 potential USTs or backfilled areas on site. Areas in which we scanned and picked up anomalies are highlighted in White on the attached map. Each of these anomalies were located at 3'-4' deep and were inconsistent and oddly shaped. Typically, USTs retain a smooth cylindrical shape signature on RADAR if they remain underground. These areas could be backfilled former UST zones, or possibly even debris/unknown material that was buried on site, but we should not rule out all possibilities with the limited information available.



Prepared for: Pioneer Tech. Prepared By: Jesse Moorhouse Date of Scanning: 7/1/2020	**Terms and Conditions** GPRS does not provide land survey or civil engineering data collection or documentation. This is provided as a reference map of the field markings and is not survey-grade.	**LEGEND**				Kia Dealership Site address: 3317 Auburn Way N., Auburn, WA	Prepared by: GPRS
		ELECTRIC		SANITARY			
		WATER		STORM			
		COMM		UNKNOWN			
		GAS	WHITE	Tanks/Backfill			



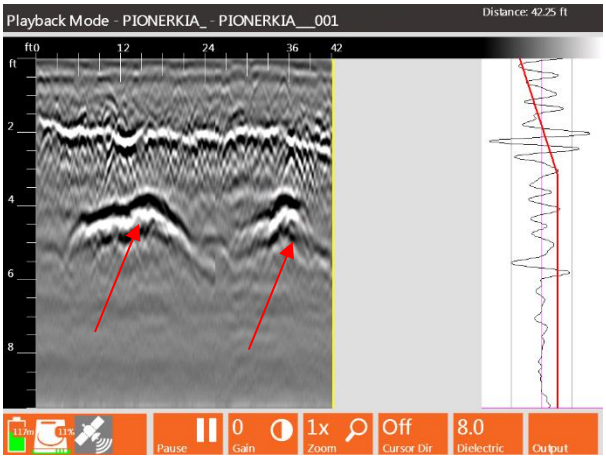






These photos above show the rough dimensions of the possible USTs or backfilled areas found on location. All these anomalies were located at the same depth of 3'-4'.

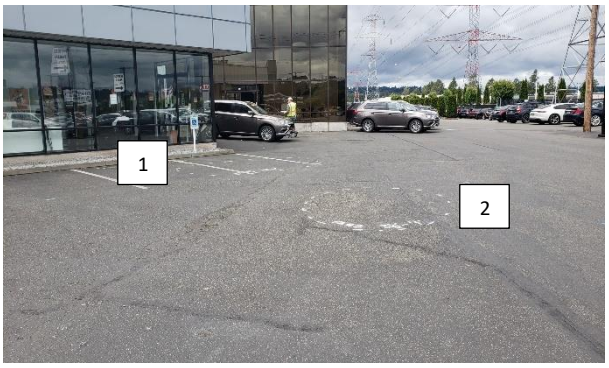
Each area was denoted a number for documentation purposes and was marked on site with white paint.





Above are two scan data shots, one of area #3 and the other of area # 1. The depth scale is shown in feet on the vertical axis, whereas scan distance is measured using the top horizontal meter on the screen. The anomalies can clearly be seen highlighted by the red arrows. The strong black reflection on top of each signature would be indicative of a void or potential air pocket. The magnetometer did detect spotty metallic signatures over each of these areas.







The three photos above show some more detail of some areas.



This data shot was taken when scanning focus area #5. This signature is very strong, and very close to what a typical UST would look like on RADAR. Historical data from the client confirmed that a gas station had previously been in the area where these anomalies were discovered. It should be noted that all borings should stay at least 5' off marked edges of each focus area in case USTs are indeed present.

CLOSING

GPRS, Inc. has been in business since 2001, specializing in underground storage tank location, concrete scanning, utility locating, and shallow void detection for projects throughout the United States. I encourage you to visit our website (www.gprsinc.com) and contact any of the numerous references listed.

GPRS appreciates the opportunity to offer our services, and we look forward to continuing to work with you on future projects. Please feel free to contact us for additional information or with any questions you may have regarding this report.

Signed,

Jesse Moorhouse
Senior Project Manager-Pacific North West

GPRS SUBSURFACE SCANNING SOLUTIONS

Direct: 206-200-9293
Jesse.Moorhouse@gprsinc.com
www.gprsinc.com

Job Summary

Job Date : 5/17/2021

Customer	PIONEERS TECHNOLOGY CORPORATION	**Phone Number**	(360) 828-3739

Billing Address	City	State	Zip
5205 CORPORATE CENTER CT SE	OLYMPIA	WA	98503

Job Details

Jobsite Location	3317 AUBURN WAY
City	AUBURN
State	WA

WA Number	267115
Job Num	AUBRUN KIA
PO Num	

Lead Technician	MARSHALL, STEPHAN	**Phone**	425-414-6022	**Email**	stephan.marshall@gprsinc.com

Thank you for using GPRS on your project. We appreciate the opportunity to work with you. If you have questions regarding the results of this scanning, please contact the lead GPRS technician on this project.

EQUIPMENT USED

The following equipment was used on this project:

- Underground Scanning GPR antenna. Typically capable of detecting objects up to 8' deep or more in ideal conditions but maximum effective depth can vary widely and depends on site and soil conditions. Depth penetration is most commonly limited by moisture and clay/conductive soils. Depths provided should always be treated as estimates as their accuracy can be affected by multiple factors.
- Electromagnetic Pipe and Cable Locator. Detects electromagnetic fields. Used to actively trace conductive pipes and tracer wires, or passively detect power and radio signals traveling along conductive pipes and utilities. Depths provided should always be treated as estimates as their accuracy can be affected by multiple factors.
- Magnetometer. Detects ferromagnetic objects at depths up to 8' by detecting their magnetic fields. Effective at detecting well heads, buried manholes, and other iron objects.

Work Performed

Ground Penetrating Radar Systems performed the following work on this project:

Underground Tanks

The scope of work included scanning the designated area to attempt to locate evidence of underground storage tanks and/or UST removal excavations. The locations of any UST's, associated piping, or excavations detected were marked with paint, flags, or other appropriate means, and results were reviewed with onsite personnel unless otherwise noted. The ability to locate these objects depends on the maximum depth penetration and soil conditions and non-metallic tanks can be especially difficult to locate.

- The total area scanned was approximately 6000 square feet.
- Using GPR, radio detection and magnetometer to clear five previously located possible UST's for pot holing on the Northeastern corner of the Auburn Mitsubishi dealership.

Job Summary

Job Date : 5/17/2021

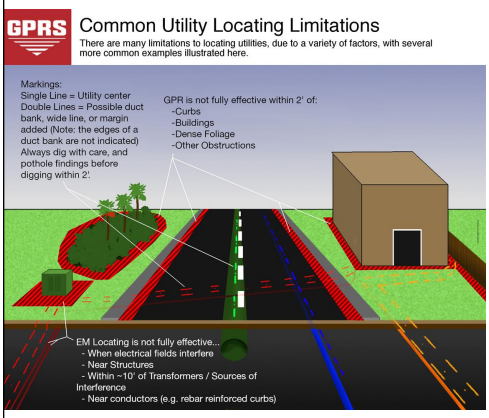
- The effective depth of GPR will vary throughout a site depending on surface and soil conditions. In this area, the maximum effective GPR depth was approximately 0-4 feet.
- Used GPR to confirm five locations of possible UST.

  Data showed that their was possibly UST in the ground approximately 3’ - 4’ deep.

  GPRS marked the approximate depths of these anomalies. It is recommended to hand dig 6”-1’ from the anomaly to confirm depth before excavating.

  A water line was previously marked out above tank #5. However we were unable to confirm the water line location with GPR due to quality of GPR data, and radio detection seemed to have the water line following the electrical lines. It’s recommended to hand dig around this area in order to confirm wether or not a water line is present.

Pictures

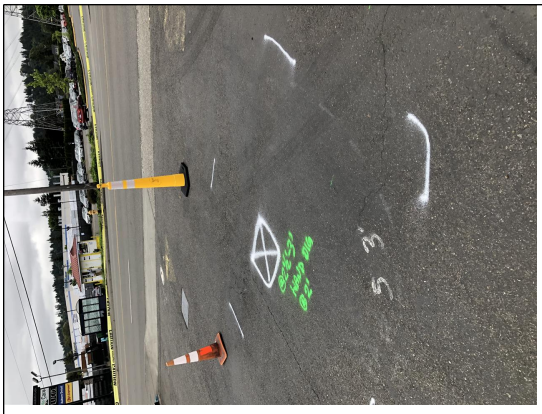


Utility Limitations



Job Summary

Job Date : 5/17/2021







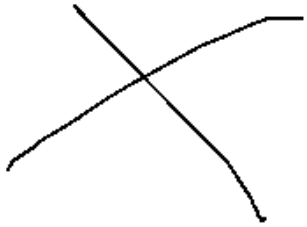
TERMS & CONDITIONS

http://www.gprsinc.com/termsandconditions.html

Job Summary

Job Date : 5/17/2021

SIGNATURE



Contact Name

Joel Hecker (360) 828-3739 Heckerj@uspioneer.com

Job Summary

Job Date : 5/17/2021

GPRS

1.866.914.4718 · GPRSINC.COM



UTILITY LOCATING

To ensure the overall timely success of your project, utility detection is critical to any construction project where subsurface excavation is planned. If this critical first step is ignored, the risk for injury increases, budget overruns can multiply and your schedule can be delayed.

VIDEO PIPE INSPECTION

Video Pipe Inspection (CCTV) is a service used to inspect underground water, sewer and lateral pipelines. VPI is a great tool for investigating cross-bores, structural faults and damages, and lateral line inspection.

CONCRETE SCANNING

With new build construction and renovation projects, the likelihood of needing to cut or core concrete is high. There is an inherent risk of striking rebar, conduits, and post tension cables during the cutting or coring process. Our industry-leading concrete scanning services can mitigate the risks associated with saw cutting and core drilling concrete slabs.

REPORTS & DRAWINGS

The goal of the GPRS Deliverables Department is to deliver clear and understandable findings with each of our outputs from field markings to field sketches, KMZ files, or CAD drawings that provide 2D site plans or even 3D CAD models. In addition, upon the completion of every project, our customers receive a job summary that includes job scope information, site photos, description of site conditions, equipment used, and notes from the project.

NATIONWIDE SERVICE

With team members located in every major metropolitan area in the U.S., we're just a short drive away from any project. Our footprint allows us to service all of your projects, nationwide.

RAPID RESPONSE

Time is always critical in any construction project. We understand this and have, accordingly, developed and perfected our operations to quickly and efficiently respond to our customers within 24-48 hours, or less.

CONSULTATIVE APPROACH

Our Project Managers are trained to ask questions and provide you with answers. This project-specific consultative approach - a GPRS trademark – helps us hone in on your subsurface issues and ensure we provide valuable problem-solving solutions to keep your job moving.

PROVEN RESULTS

GPRS deploys the best equipment, operated by skilled Project Managers, who know how to solve your subsurface locating issues. Since our inception, GPRS has completed hundreds of thousands of projects in North America. Our accuracy rate on these projects? Over 99%



Appendix D

Libby Environmental, Inc.
4139 Libby Road NE • Olympia, WA 98506-2518

April 17, 2019

Natasha Garland-Clark
Robinson Noble
2105 South C Street
Tacoma, WA 98402

Dear Ms. Garland-Clark:

Please find enclosed the analytical data report for the Sunset Kia-Mitsubishi Project located in Auburn, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Client: Robinson Noble
Address: 2105 South C Street
City: Tacoma State: WA Zip: 98402
Phone: 253-475-7711 Fax:
Client Project # 3350-001A

Date: 4/5/19 Page: 1 of 1
Project Manager: Natasha Garland-Clark
Project Name: Sunset Kia - Mitsubishi
Location: 3401 Auburn Way N City, State: Auburn WA
Collector: Andrew Brownell Date of Collection: 4/5/19
Email: ngarland-clark@robinson-noble.com

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals			Field Notes
1	B1	10	9:40	soil, H_2O	VOA, liter, 4oz, poly	X	X				X					X				
2	B2	10	10:15	soil, H_2O	VOA, 4oz															~~No~~ H_2O vol for ~~[illegible]~~ MTC
3	B3	10	10:55	soil, H_2O	VOA, liter, 4oz, poly															
4	B4	10	11:35	soil only	VOA, 4oz															No H_2O ~~[illegible]~~
5	B5	15	11:55	soil, H_2O	VOA, liter, 4oz, poly															
6	B6	15	12:45	soil, H_2O																
7	B7	10	2:00	soil, H_2O																
8	B8		2:25	soil only	VOA 4oz															No H_2O ~~[illegible]~~
9	B9		2:50	soil, H_2O																
10	B10		3:15	soil, H_2O																
11	B11		3:40	soil, H_2O																
12	B12		4:05	soil, H_2O																
13																				
14																				
15																				
16																				
17																				

Relinquished by	Date / Time	Received by	Date / Time
Andrew Brownell	4/8/19 11:15	[signature]	4/8/19 1115
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N	
Temp.	8.8	°C	
Seals Intact?	Y	N	N/A
Total Number of Containers			

Remarks: EIN

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

Libby Environmental, Inc.

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Email: libbyenv@gmail.com

SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

Volatile Organic Compounds by EPA Method 8260C in Soil

Sample Description		Method Blank	B1	B2	B3	B4	B5
Date Sampled	Reporting	N/A	4/5/19	4/5/19	4/5/19	4/5/19	4/5/19
Date Analyzed	Limits	4/11/19	4/11/19	4/11/19	4/11/19	4/11/19	4/11/19
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Dichlorodifluoromethane	0.06	nd	nd	nd	nd	nd	nd
Chloromethane	0.06	nd	nd	nd	nd	nd	nd
Vinyl chloride	0.02	nd	nd	nd	nd	nd	nd
Bromomethane	0.09	nd	nd	nd	nd	nd	nd
Chloroethane	0.06	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	0.05	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Methylene chloride	0.02	nd	nd	nd	nd	nd	nd
Methyl *tert*- Butyl Ether (MTBE)	0.05	nd	nd	nd	nd	nd	nd
trans -1,2-Dichloroethene	0.02	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	0.03	nd	nd	nd	nd	nd	nd
2,2-Dichloropropane	0.05	nd	nd	nd	nd	nd	nd
cis -1,2-Dichloroethene	0.02	nd	nd	nd	nd	nd	nd
Chloroform	0.02	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane (TCA)	0.02	nd	nd	nd	nd	nd	nd
Carbon tetrachloride	0.03	nd	nd	nd	nd	nd	nd
1,1-Dichloropropene	0.02	nd	nd	nd	nd	nd	nd
Benzene	0.02	nd	nd	0.50	nd	nd	nd
1,2-Dichloroethane (EDC)	0.03	nd	nd	nd	nd	nd	nd
Trichloroethene (TCE)	0.03	nd	nd	nd	nd	nd	nd
1,2-Dichloropropane	0.02	nd	nd	nd	nd	nd	nd
Dibromomethane	0.04	nd	nd	nd	nd	nd	nd
Bromodichloromethane	0.02	nd	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	0.02	nd	nd	nd	nd	nd	nd
Toluene	0.10	nd	nd	0.18	nd	nd	nd
Trans-1,3-Dichloropropene	0.03	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	0.03	nd	nd	nd	nd	nd	nd
Tetrachloroethene (PCE)	0.02	nd	nd	nd	nd	nd	nd
1,3-Dichloropropane	0.05	nd	nd	nd	nd	nd	nd
Dibromochloromethane	0.03	nd	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.005	nd	nd	nd	nd	nd	nd
Chlorobenzene	0.02	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.03	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	7.3	nd	nd	nd
Total Xylenes	0.15	nd	nd	4.6	nd	nd	nd
Styrene	0.02	nd	nd	nd	nd	nd	nd

Libby Environmental, Inc.

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

Volatile Organic Compounds by EPA Method 8260C in Soil

Sample Description		Method Blank	B1	B2	B3	B4	B5
Date Sampled	Reporting	N/A	4/5/19	4/5/19	4/5/19	4/5/19	4/5/19
Date Analyzed	Limits	4/11/19	4/11/19	4/11/19	4/11/19	4/11/19	4/11/19
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Bromoform	0.03	nd	nd	nd	nd	nd	nd
Isopropylbenzene	0.05	nd	nd	1.70	nd	nd	nd
1,2,3-Trichloropropane	0.05	nd	nd	nd	nd	nd	nd
Bromobenzene	0.03	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.03	nd	nd	nd	nd	nd	nd
n-Propylbenzene	0.04	nd	nd	5.8	nd	nd	nd
2-Chlorotoluene	0.03	nd	nd	nd	nd	nd	nd
4-Chlorotoluene	0.03	nd	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	0.03	nd	nd	1.9	nd	nd	nd
tert-Butylbenzene	0.03	nd	nd	0.80	nd	nd	nd
1,2,4-Trimethylbenzene	0.03	nd	nd	5.5	nd	nd	nd
sec-Butylbenzene	0.03	nd	nd	1.4	nd	0.70	nd
1,3-Dichlorobenzene	0.03	nd	nd	nd	nd	nd	nd
Isopropyltoluene	0.03	nd	nd	0.15	nd	nd	nd
1,4-Dichlorobenzene	0.03	nd	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	0.03	nd	nd	nd	nd	nd	nd
n-Butylbenzene	0.05	nd	nd	4.5	nd	0.53	nd
1,2-Dibromo-3-Chloropropane	0.05	nd	nd	nd	nd	nd	nd
1,2,4-Trichlorolbenzene	0.05	nd	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	0.10	nd	nd	nd	nd	nd	nd
Naphthalenes	0.10	nd	nd	3.8	nd	nd	nd
1,2,3-Trichlorobenzene	0.10	nd	nd	nd	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		117	79	98	65	87	90
1,2-Dichloroethane-d4		104	99	87	90	99	99
Toluene-d8		101	100	118	97	94	101
4-Bromofluorobenzene		108	123	84	106	127	116

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

* ANALYZED BY SIM
ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Kodey Eley

Libby Environmental, Inc.

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

Volatile Organic Compounds by EPA Method 8260C in Soil

Sample Description		B5 Dup	B6	B7	B8	B9	B10
Date Sampled	Reporting	4/5/19	4/5/19	4/5/19	4/5/19	4/5/19	4/5/19
Date Analyzed	Limits	4/11/19	4/11/19	4/11/19	4/11/19	4/11/19	4/11/19
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Dichlorodifluoromethane	0.06	nd	nd	nd	nd	nd	nd
Chloromethane	0.06	nd	nd	nd	nd	nd	nd
Vinyl chloride	0.02	nd	nd	nd	nd	nd	nd
Bromomethane	0.09	nd	nd	nd	nd	nd	nd
Chloroethane	0.06	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	0.05	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Methylene chloride	0.02	nd	nd	nd	nd	nd	nd
Methyl *tert*- Butyl Ether (MTBE)	0.05	nd	nd	nd	nd	nd	nd
trans -1,2-Dichloroethene	0.02	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	0.03	nd	nd	nd	nd	nd	nd
2,2-Dichloropropane	0.05	nd	nd	nd	nd	nd	nd
cis -1,2-Dichloroethene	0.02	nd	nd	nd	nd	nd	nd
Chloroform	0.02	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane (TCA)	0.02	nd	nd	nd	nd	nd	nd
Carbon tetrachloride	0.03	nd	nd	nd	nd	nd	nd
1,1-Dichloropropene	0.02	nd	nd	nd	nd	nd	nd
Benzene	0.02	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane (EDC)	0.03	nd	nd	nd	nd	nd	nd
Trichloroethene (TCE)	0.03	nd	nd	nd	nd	nd	nd
1,2-Dichloropropane	0.02	nd	nd	nd	nd	nd	nd
Dibromomethane	0.04	nd	nd	nd	nd	nd	nd
Bromodichloromethane	0.02	nd	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	0.02	nd	nd	nd	nd	nd	nd
Toluene	0.10	nd	nd	nd	nd	nd	nd
Trans-1,3-Dichloropropene	0.03	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	0.03	nd	nd	nd	nd	nd	nd
Tetrachloroethene (PCE)	0.02	nd	nd	nd	nd	nd	nd
1,3-Dichloropropane	0.05	nd	nd	nd	nd	nd	nd
Dibromochloromethane	0.03	nd	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.005	nd	nd	nd	nd	nd	nd
Chlorobenzene	0.02	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.03	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd
Total Xylenes	0.15	nd	nd	nd	nd	nd	nd
Styrene	0.02	nd	nd	nd	nd	nd	nd

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

Volatile Organic Compounds by EPA Method 8260C in Soil

Sample Description		B5 Dup	B6	B7	B8	B9	B10
Date Sampled	Reporting	4/5/19	4/5/19	4/5/19	4/5/19	4/5/19	4/5/19
Date Analyzed	Limits	4/11/19	4/11/19	4/11/19	4/11/19	4/11/19	4/11/19
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Bromoform	0.03	nd	nd	nd	nd	nd	nd
Isopropylbenzene	0.05	nd	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	0.05	nd	nd	nd	nd	nd	nd
Bromobenzene	0.03	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.03	nd	nd	nd	nd	nd	nd
n-Propylbenzene	0.04	nd	nd	nd	nd	nd	nd
2-Chlorotoluene	0.03	nd	nd	nd	nd	nd	nd
4-Chlorotoluene	0.03	nd	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	0.03	nd	nd	nd	nd	nd	nd
tert-Butylbenzene	0.03	nd	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	0.03	nd	nd	nd	nd	nd	nd
sec-Butylbenzene	0.03	nd	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	0.03	nd	nd	nd	nd	nd	nd
Isopropyltoluene	0.03	nd	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	0.03	nd	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	0.03	nd	nd	nd	nd	nd	nd
n-Butylbenzene	0.05	nd	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	0.05	nd	nd	nd	nd	nd	nd
1,2,4-Trichlorolbenzene	0.05	nd	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	0.10	nd	nd	nd	nd	nd	nd
Naphthalenes	0.10	nd	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	0.10	nd	nd	nd	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		85	98	87	99	90	78
1,2-Dichloroethane-d4		104	102	99	87	111	94
Toluene-d8		102	94	99	100	102	102
4-Bromofluorobenzene		118	122	120	118	117	114

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

* ANALYZED BY SIM
ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Kodey Eley

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

Volatile Organic Compounds by EPA Method 8260C in Soil

Sample Description		B11	B12	B12 Dup
Date Sampled Date Analyzed	Reporting Limits (mg/kg)	4/5/19 4/11/19 (mg/kg)	4/5/19 4/11/19 (mg/kg)	4/5/19 4/11/19 (mg/kg)
Dichlorodifluoromethane	0.06	nd	nd	nd
Chloromethane	0.06	nd	nd	nd
Vinyl chloride	0.02	nd	nd	nd
Bromomethane	0.09	nd	nd	nd
Chloroethane	0.06	nd	nd	nd
Trichlorofluoromethane	0.05	nd	nd	nd
1,1-Dichloroethene	0.05	nd	nd	nd
Methylene chloride	0.02	nd	nd	nd
Methyl *tert*- Butyl Ether (MTBE)	0.05	nd	nd	nd
trans -1,2-Dichloroethene	0.02	nd	nd	nd
1,1-Dichloroethane	0.03	nd	nd	nd
2,2-Dichloropropane	0.05	nd	nd	nd
cis -1,2-Dichloroethene	0.02	nd	nd	nd
Chloroform	0.02	nd	nd	nd
1,1,1-Trichloroethane (TCA)	0.02	nd	nd	nd
Carbon tetrachloride	0.03	nd	nd	nd
1,1-Dichloropropene	0.02	nd	nd	nd
Benzene	0.02	nd	nd	nd
1,2-Dichloroethane (EDC)	0.03	nd	nd	nd
Trichloroethene (TCE)	0.03	nd	nd	nd
1,2-Dichloropropane	0.02	nd	nd	nd
Dibromomethane	0.04	nd	nd	nd
Bromodichloromethane	0.02	nd	nd	nd
cis-1,3-Dichloropropene	0.02	nd	nd	nd
Toluene	0.10	nd	nd	nd
Trans-1,3-Dichloropropene	0.03	nd	nd	nd
1,1,2-Trichloroethane	0.03	nd	nd	nd
Tetrachloroethene (PCE)	0.02	nd	nd	nd
1,3-Dichloropropane	0.05	nd	nd	nd
Dibromochloromethane	0.03	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.005	nd	nd	nd
Chlorobenzene	0.02	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.03	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd
Total Xylenes	0.15	nd	nd	nd
Styrene	0.02	nd	nd	nd

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

Volatile Organic Compounds by EPA Method 8260C in Soil

Sample Description		B11	B12	B12 Dup
Date Sampled	Reporting	4/5/19	4/5/19	4/5/19
Date Analyzed	Limits	4/11/19	4/11/19	4/11/19
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Bromoform	0.03	nd	nd	nd
Isopropylbenzene	0.05	nd	nd	nd
1,2,3-Trichloropropane	0.05	nd	nd	nd
Bromobenzene	0.03	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.03	nd	nd	nd
n-Propylbenzene	0.04	nd	nd	nd
2-Chlorotoluene	0.03	nd	nd	nd
4-Chlorotoluene	0.03	nd	nd	nd
1,3,5-Trimethylbenzene	0.03	nd	nd	nd
tert-Butylbenzene	0.03	nd	nd	nd
1,2,4-Trimethylbenzene	0.03	nd	nd	nd
sec-Butylbenzene	0.03	nd	nd	nd
1,3-Dichlorobenzene	0.03	nd	nd	nd
Isopropyltoluene	0.03	nd	nd	nd
1,4-Dichlorobenzene	0.03	nd	nd	nd
1,2-Dichlorobenzene	0.03	nd	nd	nd
n-Butylbenzene	0.05	nd	nd	nd
1,2-Dibromo-3-Chloropropane	0.05	nd	nd	nd
1,2,4-Trichlorolbenzene	0.05	nd	nd	nd
Hexachloro-1,3-butadiene	0.10	nd	nd	nd
Naphthalenes	0.10	nd	nd	nd
1,2,3-Trichlorobenzene	0.10	nd	nd	nd
Surrogate Recovery				
Dibromofluoromethane		82	79	77
1,2-Dichloroethane-d4		93	79	78
Toluene-d8		89	101	94
4-Bromofluorobenzene		106	100	99

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

* ANALYZED BY SIM
ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Kodey Eley

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

QA/QC Data - EPA 8260C Analyses

Sample Identification: B5							
	Matrix Spike			Matrix Spike Duplicate			RPD
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	(%)
1,1-Dichloroethene	0.50	0.34	67	0.50	0.33	66	1.2
Benzene	0.50	0.39	79	0.50	0.44	87	10.3
Toluene	0.50	0.40	80	0.50	0.47	95	17.2
Chlorobenzene	0.50	0.42	85	0.50	0.45	91	6.8
Trichloroethene (TCE)	0.50	0.39	79	0.50	0.36	72	8.8
Surrogate Recovery							
Dibromofluoromethane			108			77	
1,2-Dichloroethane-d4			113			65	
Toluene-d8			121			117	
4-Bromofluorobenzene			133			129	

	Laboratory Control Sample		
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)
1,1-Dichloroethene	0.50	0.42	84
Benzene	0.50	0.53	105
Toluene	0.50	0.53	106
Chlorobenzene	0.50	0.58	117
Trichloroethene (TCE)	0.50	0.48	96
Surrogate Recovery			
Dibromofluoromethane			92
1,2-Dichloroethane-d4			102
Toluene-d8			100
4-Bromofluorobenzene			112

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 65%-135%
ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Kodey Eley

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

Analyses of Gasoline (NWTPH-Gx) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)
Method Blank	4/11/19	101%	nd
B1	4/11/19	100%	nd
B2	4/11/19	105%	1830
B3	4/11/19	97%	nd
B4	4/11/19	94%	nd
B5	4/11/19	101%	nd
B5 Dup	4/11/19	102%	nd
B6	4/11/19	94%	nd
B7	4/11/19	99%	nd
B8	4/11/19	100%	nd
B9	4/11/19	102%	nd
B10	4/11/19	102%	nd
B11	4/11/19	89%	nd
B12	4/11/19	101%	nd
B12 Dup	4/11/19	94%	nd
Practical Quantitation Limit			10

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Toluene-d8): 65% TO 135%

ANALYSES PERFORMED BY: Kodey Eley

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	4/9/19	100	nd	nd
B1	4/9/19	96	nd	nd
B2	4/9/19	117	nd	nd
B3	4/9/19	85	nd	nd
B4	4/9/19	101	nd	nd
B5	4/9/19	84	nd	nd
B6	4/9/19	101	nd	nd
B7	4/9/19	86	nd	nd
B7 Dup	4/9/19	85	nd	nd
B8	4/9/19	98	nd	nd
B9	4/9/19	97	nd	nd
B10	4/9/19	86	nd	nd
B11	4/9/19	103	nd	nd
B12	4/9/19	82	nd	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Kodey Eley

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

Analyses of Total Metals in Soil by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Arsenic (mg/kg)
Method Blank	4/13/19	nd	nd	nd	nd
B1	4/13/19	nd	nd	nd	nd
B1 Dup	4/13/19	nd	nd	nd	nd
B2	4/13/19	nd	nd	nd	nd
B3	4/13/19	nd	nd	nd	nd
B4	4/13/19	nd	nd	nd	nd
B5	4/13/19	nd	nd	nd	nd
B6	4/13/19	nd	nd	nd	nd
B7	4/13/19	nd	nd	nd	nd
B8	4/13/19	nd	nd	nd	nd
B9	4/13/19	nd	nd	nd	nd
B10	4/13/19	nd	nd	nd	nd
B11	4/13/19	nd	nd	nd	nd
B12	4/13/19	nd	nd	nd	nd
Practical Quantitation Limit		5.0	1.0	5.0	5.0

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Dirk Peterson

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

QA/QC for Total Metals in Soil by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (% Recovery)	Cadmium (% Recovery)	Chromium (% Recovery)	Arsenic (% Recovery)
LCS	4/13/19	90%	110%	97%	101%
B1 MS	4/13/19	88%	109%	113%	81%
B1 MSD	4/13/19	91%	111%	107%	85%
RPD	4/13/19	3%	2%	5%	5%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Dirk Peterson

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
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Libby Project # L190408-3
Client Project # 3350-001A

Analyses of Total Mercury in Soil by EPA Method 7471

Sample Number	Date Analyzed	Mercury (mg/kg)
Method Blank	4/13/19	nd
B1	4/13/19	nd
B1 Dup	4/13/19	nd
B2	4/13/19	nd
B3	4/13/19	nd
B4	4/13/19	nd
B5	4/13/19	nd
B6	4/13/19	nd
B7	4/13/19	nd
B8	4/13/19	nd
B9	4/13/19	nd
B10	4/13/19	nd
B11	4/13/19	nd
B12	4/13/19	nd
Practical Quantitation Limit		0.5

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Kodey Eley

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

QA/QC for Total Mercury by EPA Method 7471

Sample Number	Date Analyzed	Mercury (% Recovery)
LCS	4/13/19	100%
B1 MS	4/13/19	105%
B1 MSD	4/13/19	105%
RPD	4/13/19	0%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Kodey Eley

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

Volatile Organic Compounds by EPA Method 8260C in Water

Sample Description		Method Blank	B1	B2	B3	B5	B6
Date Sampled	Reporting	N/A	4/5/19	4/5/19	4/5/19	4/5/19	4/5/19
Date Analyzed	Limits	4/9/19	4/9/19	4/9/19	4/9/19	4/9/19	4/9/19
	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Dichlorodifluoromethane	2.0	nd	nd	nd	nd	nd	nd
Chloromethane	2.0	nd	nd	nd	nd	nd	nd
Vinyl chloride	0.2	nd	nd	nd	nd	nd	nd
Bromomethane	2.0	nd	nd	nd	nd	nd	nd
Chloroethane	2.0	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	2.0	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	0.5	nd	nd	nd	nd	nd	nd
Methylene chloride	1.0	nd	nd	nd	nd	nd	nd
Methyl *tert*- Butyl Ether (MTBE)	5.0	nd	nd	nd	nd	nd	nd
trans -1,2-Dichloroethene	1.0	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	1.0	nd	nd	nd	nd	nd	nd
2,2-Dichloropropane	2.0	nd	nd	nd	nd	nd	nd
cis -1,2-Dichloroethene	1.0	nd	nd	nd	nd	nd	nd
Chloroform	1.0	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane (TCA)	1.0	nd	nd	nd	nd	nd	nd
Carbon tetrachloride	1.0	nd	nd	nd	nd	nd	nd
1,1-Dichloropropene	1.0	nd	nd	nd	nd	nd	nd
Benzene	1.0	nd	nd	36	4.2	nd	nd
1,2-Dichloroethane (EDC)	1.0	nd	nd	nd	nd	nd	nd
Trichloroethene (TCE)	1.0	nd	nd	nd	nd	nd	nd
1,2-Dichloropropane	1.0	nd	nd	nd	nd	nd	nd
Dibromomethane	1.0	nd	nd	nd	nd	nd	nd
Bromodichloromethane	1.0	nd	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	1.0	nd	nd	nd	nd	nd	nd
Toluene	1.0	nd	nd	2.9	nd	nd	nd
Trans-1,3-Dichloropropene	1.0	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	1.0	nd	nd	nd	nd	nd	nd
Tetrachloroethene (PCE)	1.0	nd	nd	nd	nd	nd	nd
1,3-Dichloropropane	1.0	nd	nd	nd	nd	nd	nd
Dibromochloromethane	1.0	nd	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.01	nd	nd	nd	nd	nd	nd
Chlorobenzene	1.0	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	1.0	nd	nd	nd	nd	nd	nd
Ethylbenzene	1.0	nd	nd	77	nd	nd	nd
Total Xylenes	2.0	nd	nd	30	3.9	nd	nd
Styrene	1.0	nd	nd	nd	nd	nd	nd

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Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

Volatile Organic Compounds by EPA Method 8260C in Water

Sample Description		Method Blank	B1	B2	B3	B5	B6
Date Sampled	Reporting	N/A	4/5/19	4/5/19	4/5/19	4/5/19	4/5/19
Date Analyzed	Limits	4/9/19	4/9/19	4/9/19	4/9/19	4/9/19	4/9/19
	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Bromoform	1.0	nd	nd	nd	nd	nd	nd
Isopropylbenzene	4.0	nd	nd	22	nd	nd	nd
1,2,3-Trichloropropane	1.0	nd	nd	nd	nd	nd	nd
Bromobenzene	1.0	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1.0	nd	nd	nd	nd	nd	nd
n-Propylbenzene	1.0	nd	nd	43	nd	nd	nd
2-Chlorotoluene	1.0	nd	nd	nd	nd	nd	nd
4-Chlorotoluene	1.0	nd	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	1.0	nd	nd	2.8	nd	nd	nd
tert-Butylbenzene	1.0	nd	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	1.0	nd	nd	5.9	nd	nd	nd
sec-Butylbenzene	1.0	nd	nd	6.3	nd	nd	nd
1,3-Dichlorobenzene	1.0	nd	nd	nd	nd	nd	nd
Isopropyltoluene	1.0	nd	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	1.0	nd	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	1.0	nd	nd	nd	nd	nd	nd
n-Butylbenzene	1.0	nd	nd	9.3	nd	nd	nd
1,2-Dibromo-3-Chloropropane	1.0	nd	nd	nd	nd	nd	nd
1,2,4-Trichlorolbenzene	2.0	nd	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	5.0	nd	nd	nd	nd	nd	nd
Naphthalenes	5.0	nd	nd	13	nd	nd	nd
1,2,3-Trichlorobenzene	5.0	nd	nd	nd	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		94	122	107	88	95	95
1,2-Dichloroethane-d4		99	102	90	98	111	106
Toluene-d8		99	96	104	101	99	98
4-Bromofluorobenzene		106	115	118	107	107	103

"nd" Indicates not detected at listed detection limit.
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ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

Volatile Organic Compounds by EPA Method 8260C in Water

Sample Description		B7	B9	B10	B11	B12	B12 Dup
Date Sampled	Reporting	4/5/19	4/5/19	4/5/19	4/5/19	4/5/19	4/5/19
Date Analyzed	Limits	4/9/19	4/9/19	4/9/19	4/9/19	4/9/19	4/9/19
	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Dichlorodifluoromethane	2.0	nd	nd	nd	nd	nd	nd
Chloromethane	2.0	nd	nd	nd	nd	nd	nd
Vinyl chloride	0.2	nd	nd	nd	nd	nd	nd
Bromomethane	2.0	nd	nd	nd	nd	nd	nd
Chloroethane	2.0	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	2.0	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	0.5	nd	nd	nd	nd	nd	nd
Methylene chloride	1.0	nd	nd	nd	nd	nd	nd
Methyl *tert*- Butyl Ether (MTBE)	5.0	nd	nd	nd	nd	nd	nd
trans -1,2-Dichloroethene	1.0	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	1.0	nd	nd	nd	nd	nd	nd
2,2-Dichloropropane	2.0	nd	nd	nd	nd	nd	nd
cis -1,2-Dichloroethene	1.0	nd	nd	nd	nd	nd	nd
Chloroform	1.0	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane (TCA)	1.0	nd	nd	nd	nd	nd	nd
Carbon tetrachloride	1.0	nd	nd	nd	nd	nd	nd
1,1-Dichloropropene	1.0	nd	nd	nd	nd	nd	nd
Benzene	1.0	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane (EDC)	1.0	nd	nd	nd	nd	nd	nd
Trichloroethene (TCE)	1.0	nd	nd	nd	nd	nd	nd
1,2-Dichloropropane	1.0	nd	nd	nd	nd	nd	nd
Dibromomethane	1.0	nd	nd	nd	nd	nd	nd
Bromodichloromethane	1.0	nd	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	1.0	nd	nd	nd	nd	nd	nd
Toluene	1.0	nd	nd	nd	nd	nd	nd
Trans-1,3-Dichloropropene	1.0	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	1.0	nd	nd	nd	nd	nd	nd
Tetrachloroethene (PCE)	1.0	nd	nd	nd	nd	nd	nd
1,3-Dichloropropane	1.0	nd	nd	nd	nd	nd	nd
Dibromochloromethane	1.0	nd	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.01	nd	nd	nd	nd	nd	nd
Chlorobenzene	1.0	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	1.0	nd	nd	nd	nd	nd	nd
Ethylbenzene	1.0	nd	nd	nd	nd	nd	nd
Total Xylenes	2.0	nd	nd	nd	nd	nd	nd
Styrene	1.0	nd	nd	nd	nd	nd	nd

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Auburn, Washington
Libby Project # L190408-3
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Volatile Organic Compounds by EPA Method 8260C in Water

Sample Description		B7	B9	B10	B11	B12	B12 Dup
Date Sampled	Reporting	4/5/19	4/5/19	4/5/19	4/5/19	4/5/19	4/5/19
Date Analyzed	Limits	4/9/19	4/9/19	4/9/19	4/9/19	4/9/19	4/9/19
	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Bromoform	1.0	nd	nd	nd	nd	nd	nd
Isopropylbenzene	4.0	nd	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	1.0	nd	nd	nd	nd	nd	nd
Bromobenzene	1.0	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1.0	nd	nd	nd	nd	nd	nd
n-Propylbenzene	1.0	nd	nd	nd	nd	nd	nd
2-Chlorotoluene	1.0	nd	nd	nd	nd	nd	nd
4-Chlorotoluene	1.0	nd	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	1.0	nd	nd	nd	nd	nd	nd
tert-Butylbenzene	1.0	nd	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	1.0	nd	nd	nd	nd	nd	nd
sec-Butylbenzene	1.0	nd	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	1.0	nd	nd	nd	nd	nd	nd
Isopropyltoluene	1.0	nd	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	1.0	nd	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	1.0	nd	nd	nd	nd	nd	nd
n-Butylbenzene	1.0	nd	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	1.0	nd	nd	nd	nd	nd	nd
1,2,4-Trichlorolbenzene	2.0	nd	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	5.0	nd	nd	nd	nd	nd	nd
Naphthalenes	5.0	nd	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	5.0	nd	nd	nd	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		85	78	100	97	98	101
1,2-Dichloroethane-d4		102	96	91	92	85	97
Toluene-d8		98	98	92	90	90	88
4-Bromofluorobenzene		108	107	105	103	106	109

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

* ANALYZED BY SIM
ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

QA/QC Data - EPA 8260C Analyses

Sample Identification: L190408-4							
	Matrix Spike			Matrix Spike Dup			RPD
	Spiked Conc. (µg/L)	Measured Conc. (µg/L)	Spike Recovery (%)	Spiked Conc. (µg/L)	Measured Conc. (µg/L)	Spike Recovery (%)	
1,1-Dichloroethene	10	7.2	72	10	7.0	70	2.8
Benzene	10	7.9	79	10	7.7	77	2.6
Toluene	10	7.8	78	10	7.4	74	5.3
Chlorobenzene	10	9.0	90	10	8.7	87	3.4
Trichloroethene (TCE)	10	6.9	69	10	6.7	67	2.9
Surrogate Recovery							
Dibromofluoromethane			94			84	
1,2-Dichloroethane-d4			101			98	
Toluene-d8			99			99	
4-Bromofluorobenzene			105			105	

	Laboratory Control Sample		
	Spiked Conc. (µg/L)	Measured Conc. (µg/L)	Spike Recovery (%)
1,1-Dichloroethene	10	7.1	71
Benzene	10	7.2	72
Toluene	10	7.3	73
Chlorobenzene	10	8.7	87
Trichloroethene (TCE)	10	6.9	69
Surrogate Recovery			
Dibromofluoromethane			96
1,2-Dichloroethane-d4			99
Toluene-d8			99
4-Bromofluorobenzene			104

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 65%-135%
ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

Analyses of Gasoline (NWTPH-Gx) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (µg/L)
Method Blank	4/9/19	99%	nd
B1	4/9/19	96%	nd
B2	4/9/19	104%	3940
B3	4/9/19	101%	725
B5	4/9/19	99%	nd
B6	4/9/19	98%	nd
B7	4/9/19	98%	nd
B9	4/9/19	98%	nd
B10	4/9/19	92%	nd
B11	4/9/19	90%	nd
B12	4/9/19	90%	nd
B12 Dup	4/9/19	98%	nd
Practical Quantitation Limit			100

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Toluene-d8): 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (µg/L)	Oil (µg/L)
Method Blank	4/9/19	100	nd	nd
B1	4/9/19	108	nd	nd
B2	4/9/19	101	nd	nd
B3	4/9/19	91	nd	nd
B5	4/9/19	106	nd	nd
B6	4/9/19	112	nd	nd
B7	4/9/19	105	nd	nd
B9	4/9/19	100	nd	nd
B10	4/9/19	110	nd	nd
B11	4/9/19	106	nd	nd
B12	4/9/19	97	nd	nd
B12 Dup	4/9/19	99	nd	nd
Practical Quantitation Limit			200	400

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Kodey Eley

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

Analyses of Total Metals in Water by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Arsenic (µg/L)
Method Blank	4/13/19	nd	nd	nd	nd
B1	4/13/19	55	nd	81	24
B1 Dup	4/13/19	54	nd	82	22
B3	4/13/19	8.6	nd	34	100
B5	4/13/19	19	nd	55	25
B6	4/13/19	5.6	nd	11	16
B7	4/13/19	nd	nd	11	nd
B9	4/13/19	nd	nd	5.6	42
B10	4/13/19	nd	nd	nd	53
B11	4/13/19	5.1	nd	7.1	93
B12	4/13/19	nd	nd	nd	62
Practical Quantitation Limit		5.0	0.5	5.0	3.0

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Dirk Peterson

Libby Environmental, Inc.

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

QA/QC for Total Metals in Water by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (% Recovery)	Cadmium (% Recovery)	Chromium (% Recovery)	Arsenic (% Recovery)
LCS	4/13/19	93%	104%	113%	110%
B1 MS	4/13/19	91%	103%	87%	90%
B1 MSD	4/13/19	90%	101%	92%	86%
RPD	4/13/19	1%	2%	6%	5%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Dirk Peterson

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

Analyses of Total Mercury in Water by EPA Method 7470

Sample Number	Date Analyzed	Mercury (µg/L)
Method Blank	4/13/19	nd
B1	4/13/19	nd
B1 Dup	4/13/19	nd
B3	4/13/19	nd
B5	4/13/19	nd
B6	4/13/19	nd
B7	4/13/19	nd
B9	4/13/19	nd
B10	4/13/19	nd
B11	4/13/19	nd
B12	4/13/19	nd
Practical Quantitation Limit		0.5

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Kodey Eley

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190408-3
Client Project # 3350-001A

QA/QC for Total Mercury by EPA Method 7470

Sample Number	Date Analyzed	Mercury (% Recovery)
LCS	4/13/19	100%
B1 MS	4/13/19	83%
B1 MSD	4/13/19	83%
RPD	4/13/19	0%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Kodey Eley

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Libby Project # L190408-3
Date Received 4/8/2019
Time Received 11:15 AM

Received By KD

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody is complete?	☑	Yes	☐	No		
2. How was the sample delivered?	☐	Hand Delivered	☑	Picked Up	☐	Shipped

Log In

3. Cooler or Shipping Container is present.	☑	Yes	☐	No	☐	N/A
4. Cooler or Shipping Container is in good condition.	☑	Yes	☐	No	☐	N/A
5. Cooler or Shipping Container has Custody Seals present.	☐	Yes	☑	No	☐	N/A
6. Was an attempt made to cool the samples?	☑	Yes	☐	No	☐	N/A
7. Temperature of cooler (0°C to 8°C recommended)	1.6 °C					
8. Temperature of sample(s) (0°C to 8°C recommended)	10.0 °C					
9. Did all containers arrive in good condition (unbroken)?	☑	Yes	☐	No		
10. Is it clear what analyses were requested?	☑	Yes	☐	No		
11. Did container labels match Chain of Custody?	☑	Yes	☐	No		
12. Are matrices correctly identified on Chain of Custody?	☑	Yes	☐	No		
13. Are correct containers used for the analysis indicated?	☐	Yes	☑	No		
14. Is there sufficient sample volume for indicated analysis?	☐	Yes	☑	No		
15. Were all containers properly preserved per each analysis?	☑	Yes	☐	No		
16. Were VOA vials collected correctly (no headspace)?	☐	Yes	☐	No	☑	N/A
17. Were all holding times able to be met?	☑	Yes	☐	No		

Discrepancies/ Notes

18. Was client notified of all discrepancies?	☑	Yes	☐	No	☐ N/A
Person Notified:	Natasha			Date:	4/9/2019
By Whom:	Kodey Eley			Via:	Phone
Regarding:	Containers and volume				
19. Comments.	No ambers or polys for B2,B4, B8. B7-No DxDx.				

Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

September 19, 2019

Kari Thomas
Robinson Noble
2105 South C Street
Tacoma, WA 98402

Dear Ms. Thomas:

Please find enclosed the analytical data report for the Kia Sunset Project located in Auburn, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 9/17/19 Page: 1 of 1

Client: RN

Project Manager: Kari Thomas

Address:

Project Name: Kia Sunset

City: State: Zip:

Location: Kia Sunset Dealership City, State: Auburn, WA

Phone: 541-915-3452 Fax:

Collector: Natasha Date of Collection: 9/17/19

Client Project # 3350-001B

Email:

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	EDB, EDC, NAPTH, MTBE	Field Notes
D	1 BH13-8	8'	9:45	Soil	2-Jars, 2-Voas	X	X	X			X						X		
	2 BH13-5'	5	9:52	Soil		X	X				X								Hold
SD	3 BI3-H2O	—	10:00	Water	1-Amber		X	X			X						X		
	4 BI4-H2O	—	10:55	Water	1-Amber 3 VOAs														Hold
	5 BI4-6'	6	1115	Soil	"														Hold
	6 BI4-2	2	1120	"	"		X	X			X						X		
	7 BI5-2	2	11:50	"	"														Hold
MS	8 BI5-8	8	11:55	"	"	X	X	X			X						X		
	9 BI5-H2O	—																	Hold
	10 ~~BI6-8~~ BH16-3	3	12:45																Hold
	11 BH16-8	8	12:50				X	X			X						X		
	12 BH16-H2O	—	13:05																Hold
	13 BH17-H2O	—	14:40				X	X			X						X		
	14 BH17-8'	8	14:30				X	X			X						X		
	15 BH18-H2O	—	15:30				X	X			X						X		~~Hold~~
	16 BH18-2	2	15:20																Hold
	17 BH18-8	8	15:15				X	X			X						X		

Relinquished by:	Date / Time	Received by:	Date / Time
[signature]	9/18/19 9:20	[signature]	9/18/19 8:37
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N	
Temp.		°C	
Seals Intact?	Y	N	N/A
Total Number of Containers			

Remarks:
* added by K. Thomas via email 9-25-19 ML

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a cout of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

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KIA SUNSET PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190917-40
Client Project # 3350-001B

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		Method Blank	BH13-8	BH13-8 Dup	B14-2	B15-8	BH16-8
Date Sampled		N/A	9/17/19	9/17/19	9/17/19	9/17/19	9/17/19
Date Analyzed	PQL	9/17/19	9/17/19	9/17/19	9/17/19	9/17/19	9/17/19
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	12.7	4.57	3.6	11.6	0.18
Toluene	0.10	nd	18.9	7.30	52.3	1.63	nd
Ethylbenzene	0.05	nd	38.9	11.4	202 E	108	nd
Total Xylenes	0.15	nd	186	55.0	972 E	565 E	nd
1,2-Dichloroethane (EDC)	0.03	nd	<0.30	<0.30	<0.30	<0.30	nd
1,2-Dibromoethane (EDB) *	0.005	nd	<0.050	<0.050	<0.050	<0.050	nd
Total Naphthalenes	0.10	nd	11.7	3.03	85.9	13.2	0.84
Methyl *tert*- Butyl Ether (MTBE)	0.05	nd	<0.50	<0.50	<0.50	<0.50	nd
Gasoline	10	nd	1730	714	7050 E	5200 E	17
Surrogate Recovery							
Dibromofluoromethane		108	122	93	84	91	93
1,2-Dichloroethane-d4		103	128	78	105	102	99
Toluene-d8		99	97	95	93	95	97
4-Bromofluorobenzene		103	101	95	101	101	104

* ANALYZED BY SIM
"E" Indicates reported result is an estimate because it exceeds the calibration range.
"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

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Robinson Noble
Auburn, Washington
Libby Project # L190917-40
Client Project # 3350-001B

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		BH17-8	BH18-8
Date Sampled		9/17/19	9/17/19
Date Analyzed	PQL	9/17/19	9/17/19
	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	0.13
Toluene	0.10	nd	nd
Ethylbenzene	0.05	nd	nd
Total Xylenes	0.15	nd	nd
1,2-Dichloroethane (EDC)	0.03	nd	nd
1,2-Dibromoethane (EDB) *	0.005	nd	nd
Total Naphthalenes	0.10	nd	0.42
Methyl *tert*- Butyl Ether (MTBE)	0.05	nd	nd
Gasoline	10	nd	35
Surrogate Recovery			
Dibromofluoromethane		92	93
1,2-Dichloroethane-d4		100	102
Toluene-d8		98	98
4-Bromofluorobenzene		107	103

* ANALYZED BY SIM
"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

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KIA SUNSET PROJECT
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Auburn, Washington
Libby Project # L190917-40
Client Project # 3350-001B

QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Matrix Spike Sample Identification: B15-8

	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Benzene	0.25	0.24	0.20	96	80	18.2	65-135	
Toluene	0.25	0.29	0.27	116	108	7.1	65-135	
Ethylbenzene	0.25	0.35	0.00	0	0	0.0	65-135	S R
Total Xylenes	0.75	0.93	0.00	124	0	200	65-135	S R
1,2-Dichloroethane (EDC)	0.25	0.25	0.22	98	89	9.9	65-135	
1,2-Dibromoethane (EDB)	0.25	0.21	0.19	84	74	12.2	65-135	
Naphthalene	0.25	0.83	0.46	332	184	57.4	65-135	S R
Methyl *tert*- Butyl Ether (MTBE)	0.25	0.24	0.34	96	134	33.3	65-135	

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	95	98	65-135
1,2-Dichloroethane-d4	102	102	65-135
Toluene-d8	97	97	65-135
4-Bromofluorobenzene	100	101	65-135

"S" Indicates spike recovery outside accepted recovery limits.
"R" Indicates high relative percent difference observed.
ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Paul Burke

Laboratory Control Sample

	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	0.25	0.24	96	80-120	
Toluene	0.25	0.24	96	80-120	
Ethylbenzene	0.25	0.26	104	80-120	
Total Xylenes	0.75	0.68	91	80-120	
1,2-Dichloroethane (EDC)	0.25	0.24	97	80-120	
1,2-Dibromoethane (EDB)	0.25	0.24	96	80-120	
Naphthalene	0.25	0.29	116	80-120	
Methyl *tert*- Butyl Ether (MTBE)	0.25	0.29	116	80-120	

Surrogate Recovery		
Dibromofluoromethane	110	65-135
1,2-Dichloroethane-d4	125	65-135
Toluene-d8	95	65-135
4-Bromofluorobenzene	95	65-135

ANALYSES PERFORMED BY: Paul Burke

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Robinson Noble
Auburn, Washington
Libby Project # L190917-40
Client Project # 3350-001B

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	9/17/19	101	nd	nd
BH13-8	9/17/19	101	nd	705
B14-2	9/17/19	132	nd	295
B15-8	9/17/19	131	nd	nd
B15-8 Dup	9/17/19	104	nd	nd
BH16-8	9/17/19	85	nd	nd
BH17-8	9/17/19	79	nd	nd
BH18-8	9/17/19	94	nd	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Evan Neims

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KIA SUNSET PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190917-40
Client Project # 3350-001B

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Water

Sample Description		Method Blank	B13-H2O	B13-H2O Dup	BH17-H2O	BH18-H2O
Date Sampled		N/A	9/17/19	9/17/19	9/17/19	9/17/19
Date Analyzed	PQL (µg/L)	9/17/19 (µg/L)	9/17/19 (µg/L)	9/17/19 (µg/L)	9/17/19 (µg/L)	9/17/19 (µg/L)
Benzene	1.0	nd	543	359	nd	2.8
Toluene	2.0	nd	23	19	nd	nd
Ethylbenzene	1.0	nd	84	71	nd	1.5
Total Xylenes	2.0	nd	251	136	3.1	7.5
1,2-Dichloroethane (EDC)	1.0	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.01	nd	nd	nd	nd	nd
Total Naphthalenes	5.0	nd	44	35	5.6	nd
Methyl *tert*- Butyl Ether (MTBE)	5.0	nd	nd	nd	nd	nd
Gasoline	100	nd	2850	2360	189	1420
Surrogate Recovery						
Dibromofluoromethane		108	93	104	94	83
1,2-Dichloroethane-d4		103	94	99	99	97
Toluene-d8		99	96	105	98	98
4-Bromofluorobenzene		103	105	105	104	123

* ANALYZED BY SIM
"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

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KIA SUNSET PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190917-40
Client Project # 3350-001B

QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Water

Matrix Spike Sample Identification: B13-H2O

	Spiked Conc. (µg/L)	MS Response (µg/L)	MSD Response (µg/L)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Benzene	5.0	0.0	0.0	0	0	0.0	65-135	S R
Toluene	5.0	2.1	4.8	42	96	78.3	65-135	S R
Ethylbenzene	5.0	4.1	4.2	82	84	2.4	65-135	
Total Xylenes	15.0	15.3	14.9	102	99	2.6	65-135	
1,2-Dichloroethane (EDC)	5.0	4.9	5.3	98	106	7.8	65-135	
1,2-Dibromoethane (EDB)	5.0	4.4	5.2	88	104	16.7	65-135	
Naphthalene	5.0	5.3	3.7	106	75	34.8	65-135	
Methyl *tert*- Butyl Ether (MTBE)	5.0	5.6	6.5	112	130	14.9	65-135	

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	97	103	65-135
1,2-Dichloroethane-d4	99	105	65-135
Toluene-d8	97	102	65-135
4-Bromofluorobenzene	116	125	65-135

"S" Indicates spike recovery outside accepted recovery limits.
"R" Indicates high relative percent difference observed.
ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Paul Burke

Laboratory Control Sample

	Spiked Conc. (µg/L)	LCS Response (µg/L)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	5.0	4.8	96	80-120	
Toluene	5.0	4.8	96	80-120	
Ethylbenzene	5.0	5.2	104	80-120	
Total Xylenes	15.0	13.6	91	80-120	
1,2-Dichloroethane (EDC)	5.0	4.8	96	80-120	
1,2-Dibromoethane (EDB)	5.0	4.8	96	80-120	
Naphthalene	5.0	5.8	116	80-120	
Methyl *tert*- Butyl Ether (MTBE)	5.0	5.8	116	80-120	

Surrogate Recovery		
Dibromofluoromethane	110	65-135
1,2-Dichloroethane-d4	125	65-135
Toluene-d8	95	65-135
4-Bromofluorobenzene	95	65-135

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

KIA SUNSET PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190917-40
Client Project # 3350-001B

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (µg/L)	Oil (µg/L)
Method Blank	9/17/19	103	nd	nd
B13-H2O	9/17/19	98	nd	nd
B13-H2O Dup	9/17/19	104	nd	nd
BH17-H2O	9/17/19	112	nd	nd
BH18-H2O	9/17/19	111	nd	nd
Practical Quantitation Limit			200	400

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.
3322 South Bay Road NE • Olympia, WA 98506-2957

September 26, 2019

Kari Thomas
Robinson Noble
2105 South C Street
Tacoma, WA 98402

Dear Ms. Thomas:

Please find enclosed the analytical data report for the Kia Sunset Project located in Auburn, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 9/18/19 Page: 1 of 2

Client: RN

Project Manager: Kari Thomas

Address:

Project Name: Kia Sunset

City: State: Zip:

Location: Kia Dealership City, State: Auburn, WA

Phone: 541-915-3452 Fax:

Collector: Natasha Date of Collection: 9/17-18/19

Client Project # 3350-001B

Email:

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	EDB, EDC, Naph, MTBE		Field Notes	collected
1	BH19-3	3	15:50	soil	2 Voa, 2-4oz															Hold	9/17
2	BH19-H2O	—		Water	3 Voa, 1 Amber															Hold	"
3	BH19-9	9	16:10	soil	2 Voa, 2-4oz															Hold	"
4	BH20-2	2	16:45	"	"															Hold	"
5	BH20-9	9	16:40	"	" "															Hold	"
6	BH20-H2O	—	16:55	Water	3 Voa, 1 amber															Hold	"
7	MW1-7	7	9:10	soil	2 Voa, 2-4oz		X	X			X						X				9/18
8	MW1-10	10	9:15	"	"															Hold	
9	MW2-2	2	12:00	"	"															Hold	
10	MW2-8	8	11:55	"	"		X	X			X						X				
11	BH21-H2O	—	13:40	Water	3 Voa, 1 amber															Hold	
12	BH21-1.5	1.5	13:30	soil	2 Voa, 2-4oz		X	X			X						X				
13	BH21-8	8	13:35	"	"															Hold	
14	BH22-H2O	—	14:30	Water																Hold	
15	BH22-2'	2'	14:40	soil			X	X			X						X				
16	BH22-9'	9'	14:45	"																Hold	
17																					

X added by K. Thomas via email 9-24-19 ML

Relinquished by:	Date / Time	Received by:	Date / Time
[signature]	9/18/19 1705	[signature]	9/17/19 1705
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N	
Temp.		°C	
Seals Intact?	Y	N	N/A
Total Number of Containers			

Remarks:

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a cout of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 9/18/19 Page: 2 of 2

Client: RN

Project Manager: Kari Thomas

Address:

Project Name: Kia Sunset

City: State: Zip:

Location: Kia Dealership City, State: Auburn, WA

Phone: 541-915-3452 Fax:

Collector: Natasha Date of Collection: 9/18/19

Client Project # 3350-001B

Email:

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	EDB, EDC, Napth, MTBE		Field Notes
1	BH23-H2O	—	16:50	water																Hold
2	BH23-2	2'	16:40	soil			X	X			X							X		Analyze Fix Base
3	BH23-8	8'	16:45	Soil			X	X			X							X		" " changed to BH23-8 per Va Telecon 9/19/19
4	BH24-5'	5'	17:15	Soil			X	X			X							X		" "
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				

Relinquished by:	Date / Time	Received by:	Date / Time
[signature]	9/18/19 17:05	[signature]	9/18/19 1705
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N	
Temp.		°C	
Seals Intact?	Y	N	N/A
Total Number of Containers			

Remarks: 3 samples to be analyzed Fix Base ML

TAT: 24HR 48HR (5-DAY)

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a cout of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

Libby Environmental, Inc.

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KIA SUNSET PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190918-40
Client Project # 3350-001B

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		Method Blank	MW1-7	MW1-7 Dup	MW2-8	BH21-1.5	BH22-2
Date Sampled		N/A	9/18/19	9/18/19	9/18/19	9/18/19	9/18/19
Date Analyzed	PQL (mg/kg)	9/18/19 (mg/kg)	9/18/19 (mg/kg)	9/18/19 (mg/kg)	9/18/19 (mg/kg)	9/18/19 (mg/kg)	9/18/19 (mg/kg)
Benzene	0.02	nd	nd	nd	nd	0.27	nd
Toluene	0.10	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	0.28	nd
Total Xylenes	0.15	nd	nd	nd	nd	0.27	nd
1,2-Dichloroethane (EDC)	0.03	nd	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.005	nd	nd	nd	nd	nd	nd
Total Naphthalenes	0.10	nd	nd	nd	nd	2.05	0.26
Methyl *tert*- Butyl Ether (MTBE)	0.05	nd	nd	nd	nd	nd	nd
Gasoline	10	nd	nd	nd	nd	33	368 E
Surrogate Recovery							
Dibromofluoromethane		99	88	89	93	93	91
1,2-Dichloroethane-d4		96	82	75	95	98	90
Toluene-d8		94	95	95	93	93	96
4-Bromofluorobenzene		91	95	91	101	102	128

* ANALYZED BY SIM
"E" Indicates reported result is an estimate because it exceeds the calibration range.
"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

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KIA SUNSET PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190918-40
Client Project # 3350-001B

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		Method Blank	BH23-2	BH23-8	BH24-5	BH24-5 Dup
Date Sampled		N/A	9/18/19	9/18/19	9/18/19	9/18/19
Date Analyzed	PQL (mg/kg)	9/19/19 (mg/kg)	9/19/19 (mg/kg)	9/19/19 (mg/kg)	9/19/19 (mg/kg)	9/19/19 (mg/kg)
Benzene	0.02	nd	0.039	nd	nd	nd
Toluene	0.10	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd
Total Xylenes	0.15	nd	nd	nd	nd	nd
1,2-Dichloroethane (EDC)	0.03	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.005	nd	nd	nd	nd	nd
Total Naphthalenes	0.10	nd	nd	nd	0.88	0.84
Methyl *tert*- Butyl Ether (MTBE)	0.05	nd	nd	nd	nd	nd
Gasoline	10	nd	17	nd	96	59
Surrogate Recovery						
Dibromofluoromethane		97	91	82	89	88
1,2-Dichloroethane-d4		102	97	105	101	104
Toluene-d8		97	99	80	120	82
4-Bromofluorobenzene		101	94	105	110	106

* ANALYZED BY SIM
"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

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Email: libbyenv@gmail.com

KIA SUNSET PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190918-40
Client Project # 3350-001B

QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Matrix Spike Sample Identification: MW1-7

	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)
Benzene	0.25	0.27	0.27	108	108	0.0	65-135
Toluene	0.25	0.27	0.27	108	108	0.0	65-135
Ethylbenzene	0.25	0.27	0.28	108	112	3.6	65-135
Total Xylenes	0.75	0.84	0.93	112	124	10.2	65-135
1,2-Dichloroethane (EDC)	0.25	0.26	0.30	106	121	13.8	65-135
1,2-Dibromoethane (EDB)	0.25	0.25	0.22	101	88	14.0	65-135
Naphthalene	0.25	0.30	0.29	119	116	3.1	65-135
Methyl *tert*- Butyl Ether (MTBE)	0.25	0.30	0.29	121	116	3.6	65-135

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	123	106	65-135
1,2-Dichloroethane-d4	114	107	65-135
Toluene-d8	124	103	65-135
4-Bromofluorobenzene	113	101	65-135

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Paul Burke

Laboratory Control Sample

	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	0.25	0.24	96	80-120	
Toluene	0.25	0.25	100	80-120	
Ethylbenzene	0.25	0.29	116	80-120	
Total Xylenes	0.75	0.85	113	80-120	
1,2-Dichloroethane (EDC)	0.25	0.27	106	80-120	
1,2-Dibromoethane (EDB)	0.25	0.27	109	80-120	
Naphthalene	0.25	0.30	120	80-120	
Methyl *tert*- Butyl Ether (MTBE)	0.25	0.30	118	80-120	

Surrogate Recovery			
Dibromofluoromethane	99	65-135	
1,2-Dichloroethane-d4	97	65-135	
Toluene-d8	94	65-135	
4-Bromofluorobenzene	103	65-135	

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

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Olympia, WA 98506
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Email: libbyenv@gmail.com

KIA SUNSET PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190918-40
Client Project # 3350-001B

QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Matrix Spike Sample Identification: L190918-10

	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)
Benzene	0.25	0.27	0.29	108	116	7.1	65-135
Toluene	0.25	0.33	0.29	132	116	12.9	65-135
Ethylbenzene	0.25	0.25	0.25	100	100	0.0	65-135
Total Xylenes	0.75	0.80	0.82	107	109	2.5	65-135
1,2-Dichloroethane (EDC)	0.25	0.29	0.29	114	116	2.1	65-135
1,2-Dibromoethane (EDB)	0.25	0.24	0.27	94	108	13.4	65-135
Naphthalene	0.25	0.30	0.25	121	100	19.2	65-135
Methyl *tert*- Butyl Ether (MTBE)	0.25	0.18	0.20	73	80	9.4	65-135

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	104	104	65-135
1,2-Dichloroethane-d4	120	91	65-135
Toluene-d8	115	104	65-135
4-Bromofluorobenzene	113	123	65-135

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Paul Burke

Laboratory Control Sample

	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	0.25	0.24	96	80-120	
Toluene	0.25	0.30	120	80-120	
Ethylbenzene	0.25	0.28	112	80-120	
Total Xylenes	0.75	0.82	109	80-120	
1,2-Dichloroethane (EDC)	0.25	0.27	109	80-120	
1,2-Dibromoethane (EDB)	0.25	0.23	92	80-120	
Naphthalene	0.25	0.27	110	80-120	
Methyl *tert*- Butyl Ether (MTBE)	0.25	0.25	100	80-120	

Surrogate Recovery			
Dibromofluoromethane	103	65-135	
1,2-Dichloroethane-d4	105	65-135	
Toluene-d8	110	65-135	
4-Bromofluorobenzene	103	65-135	

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

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Email: libbyenv@gmail.com

KIA SUNSET PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190918-40
Client Project # 3350-001B

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	9/18/19	106	nd	nd
MW1-7	9/18/19	110	nd	nd
MW1-7 Dup	9/18/19	113	nd	nd
MW2-8	9/18/19	122	nd	nd
BH21-1.5	9/18/19	90	nd	nd
BH22-2	9/18/19	84	nd	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

KIA SUNSET PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190918-40
Client Project # 3350-001B

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	9/20/19	98	nd	nd
BH23-2	9/20/19	130	nd	nd
BH23-8	9/19/19	129	nd	nd
BH23-8 Dup	9/19/19	134	nd	nd
BH24-5	9/20/19	int	165	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Evan Niems

Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

October 18, 2019

Kari Thomas
Robinson Noble
2105 South C Street
Tacoma, WA 98402

Dear Ms. Thomas:

Please find enclosed the analytical data report for the Kia Sunset Project located in Auburn, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 9/18/19 Page: 1 of 2

Client: RN

Project Manager: Kari Thomas

Address:

Project Name: Kia Sunset

City: State: Zip:

Location: Kia Dealership City, State: Auburn, WA

Phone: 541-915-3452 Fax:

Collector: Natasha Date of Collection: 9/17-18/19

Client Project # 3350-001B

Email:

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260 MTCA VOC	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	EDB, EDC, Naph, MTBE	Field Notes Collected
1	BH19-3	3	15:50	soil	2 Voa, 2-4oz	X	X			X					⊗				Hold 9/17
2	BH19-H2O	—		Water	3 Voa, 1 Amber														Hold "
3	BH19-9	9	16:10	soil	2 Voa, 2-4oz														Hold "
4	BH20-2	2	16:45	"	"	X	X			X					⊗				Hold "
5	BH20-9	9	16:40	"	" "														Hold "
6	BH20-H20	—	16:55	Water	3 Voa, 1 amber														Hold "
7	MW1-7	7	9:10	soil	2 Voa, 2-4oz		X	X		X							⊗		9/18
8	MW1-10	10	9:15	"	"														Hold 10-15-19 ⊗
9	MW2-2	2	12:00	"	"														Hold MTCA5 metals
10	MW2-8	8	11:55	"	"		X	X		X							⊗		added per Natasha via email
11	BH21-H20	—	13:40	Water	3 Voa, 1 amber														Hold
12	BH21-1.5	1.5	13:30	soil	2 Voa, 2-4oz		X	X		X					⊗		⊗		
13	BH21-8	8	13:35	"	"														Hold 10-16-19 X
14	BH22-H2O	—	14:30	Water															Hold Gx, MTCAVOC, DxDx
15	BH22-2'	2'	14:40	soil			X	X		X					⊗		⊗		added per Kari via email
16	BH22-9'	9'	14:45	"															Hold
17																			

Relinquished by:	Date / Time	Received by:	Date / Time
[signature]	9/18/19 1659	[signature]	9/19/19 1705
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N	
Temp.		°C	
Seals Intact?	Y	N	N/A
Total Number of Containers			

Remarks:
⊗ added by K. Thomas via email 9-24-19 ML

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a cout of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

Libby Environmental, Inc.

Chain of Custody Record

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4139 Libby Road NE
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Fax: 360-352-4154

Date: 9/18/19 Page: 2 of 2

Client: RN

Project Manager: Kari Thomas

Address:

Project Name: Kia Sunset

City: State: Zip:

Location: Kia Dealership City, State: Auburn, WA

Phone: 541-915-3452 Fax:

Collector: Natasha Date of Collection: 9/18/19

Client Project # 3350-001B

Email:

Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	EDB, EDC, Napth, MTBE	Field Notes
1 BH23-H2O	—	16:50	Water															Hold
2 BH23-2	2'	16:40	Soil			X	X			X						(X)		Malyse Fix Base
3 BH23-8	8'	16:45	Soil			X	X			X						(X)		" " changed to BH23-8 per Natasha Telecom 9/19/19
4 BH24-5'	5'	17:15	Soil			X	X			X						(X)		" "
5																		
6																		
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15																		
16																		
17																		

Relinquished by:	Date / Time	Received by:	Date / Time
[signature]	9/18/19 17:05	[signature]	9/18/19 1705
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N	
Temp.		°C	
Seals Intact?	Y	N	N/A
Total Number of Containers			

Remarks: 3 samples to be analyzed Fix Base ML

TAT: 24HR 48HR (5-DAY)

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a cout of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

KIA SUNSET PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190918-40B
Client Project # 3350-001B

Volatile Organic Compounds by EPA Method 8260D in Soil

Sample Description		Method Blank	BH19-3	BH20-2
Date Sampled		N/A	9/17/19	9/17/19
Date Analyzed	PQL (mg/kg)	10/17/19 (mg/kg)	10/17/19 (mg/kg)	10/17/19 (mg/kg)
Benzene	0.02	nd	7.3	6.5
Toluene	0.10	nd	17	39
Ethylbenzene	0.05	nd	165	165
Total Xylenes	0.15	nd	760	778
1,2-Dichloroethane (EDC)	0.03	nd	<0.60	<0.60
1,2-Dibromoethane (EDB) *	0.005	nd	<0.10	<0.10
Total Naphthalenes	0.10	nd	<2.0	<2.0
Methyl *tert*- Butyl Ether (MTBE)	0.05	nd	<1.0	<1.0
Surrogate Recovery				
Dibromofluoromethane		111	83	88
1,2-Dichloroethane-d4		121	69	66
Toluene-d8		99	77	79
4-Bromofluorobenzene		98	92	86

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

* ANALYZED BY SIM
ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
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Email: libbyenv@gmail.com

KIA SUNSET PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190918-40B
Client Project # 3350-001B

QA/QC for Volatile Organic Compounds by EPA Method 8260D in Soil

Matrix Spike Sample Identification: L191017-6

	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Methyl *tert*- Butyl Ether (MTBE)	0.25	0.17	0.20	66	78	17.2	65-135	
Benzene	0.25	0.27	0.31	110	124	12.6	65-135	
1,2-Dichloroethane (EDC)	0.25	0.21	0.23	83	90	8.8	65-135	
Toluene	0.25	0.23	0.25	92	99	8.0	65-135	
1,2-Dibromoethane (EDB)	0.25	0.192	0.17	77	68	12.2	65-135	
Ethylbenzene	0.25	0.32	0.33	129	134	3.7	65-135	
Total Xylenes	0.75	0.82	0.86	109	115	4.8	65-135	
Naphthalenes	0.25	0.20	0.28	81	112	31.9	65-135	

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	94	101	65-135
1,2-Dichloroethane-d4	76	84	65-135
Toluene-d8	76	82	65-135
4-Bromofluorobenzene	92	99	65-135

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Sherry Chilcutt

Laboratory Control Sample

	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Methyl *tert*- Butyl Ether (MTBE)	0.25	0.23	92	80-120	
Benzene	0.25	0.23	92	80-120	
1,2-Dichloroethane (EDC)	0.25	0.28	111	80-120	
Toluene	0.25	0.26	104	80-120	
1,2-Dibromoethane (EDB)	0.25	0.30	118	80-120	
Ethylbenzene	0.25	0.26	105	80-120	
Total Xylenes	0.75	0.82	109	80-120	
Naphthalenes	0.25	0.26	103	80-120	

Surrogate Recovery			
Dibromofluoromethane	107	65-135	
1,2-Dichloroethane-d4	106	65-135	
Toluene-d8	100	65-135	
4-Bromofluorobenzene	84	65-135	

ANALYSES PERFORMED BY: Sherry Chilcutt

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
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FAX: (360) 352-4154
Email: libbyenv@gmail.com

KIA SUNSET PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190918-40B
Client Project # 3350-001B

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	10/17/19	107	nd	nd
BH19-3	10/17/19	122	780	nd
BH20-2	10/17/19	int	2170	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Evan Niems

Libby Environmental, Inc.

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Olympia, WA 98506
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KIA SUNSET PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190918-40B
Client Project # 3350-001B

Analyses of Gasoline (NWTPH-Gx) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)
Method Blank	10/18/19	80%	nd
BH19-3	10/18/19	82%	10200
BH20-2	10/18/19	79%	6630
Practical Quantitation Limit			10

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Toluene-d8): 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
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FAX: (360) 352-4154
Email: libbyenv@gmail.com

KIA SUNSET PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190918-40B
Client Project # 3350-001B

Analyses of Total Metals in Soil by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Arsenic (mg/kg)
Method Blank	10/18/19	nd	nd	nd	nd
BH19-3	10/18/19	nd	nd	nd	nd
BH20-2	10/18/19	13	nd	12	nd
BH21-1.5	10/18/19	6.3	nd	27	nd
BH22-2	10/18/19	nd	nd	6.6	nd
Practical Quantitation Limit		5.0	1.0	5.0	5.0

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Dirk Peterson

Libby Environmental, Inc.

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Olympia, WA 98506
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Email: libbyenv@gmail.com

KIA SUNSET PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190918-40B
Client Project # 3350-001B

QA/QC for Total Metals in Soil by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (% Recovery)	Cadmium (% Recovery)	Chromium (% Recovery)	Arsenic (% Recovery)
LCS	10/18/19	101%	98%	106%	113%
L191014-1 MS	10/18/19	113%	110%	115%	87%
L191014-1 MSD	10/18/19	104%	110%	103%	88%
RPD	10/18/19	8%	0%	11%	1%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Dirk Peterson

Libby Environmental, Inc.

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Olympia, WA 98506
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Email: libbyenv@gmail.com

KIA SUNSET PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190918-40B
Client Project # 3350-001B

Analyses of Total Mercury in Soil by EPA Method 7471

Sample Number	Date Analyzed	Mercury (mg/kg)
Method Blank	10/16/19	nd
BH19-3	10/16/19	nd
BH20-2	10/16/19	nd
BH21-1.5	10/16/19	nd
BH22-2	10/16/19	nd
Practical Quantitation Limit		0.5

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Sherry Chilcutt

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
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FAX: (360) 352-4154
Email: libbyenv@gmail.com

KIA SUNSET PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L190918-40B
Client Project # 3350-001B

QA/QC for Total Mercury by EPA Method 7471

Sample Number	Date Analyzed	Mercury (% Recovery)
LCS	10/16/19	114%
L191014-1 MS	10/16/19	87%
L191014-1 MSD	10/16/19	100%
RPD	10/16/19	14%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Sherry Chilcutt

Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

November 22, 2019

Kari Thomas
Robinson Noble
2105 South C Street
Tacoma, WA 98402

Dear Ms. Thomas:

Please find enclosed the analytical data report for the Kia Sunset Project located in Auburn, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 9/18/19 Page: 1 of 2

Client: RN

Project Manager: Kari Thomas

Address:

Project Name: Kia Sunset

City: State: Zip:

Location: Kia Dealership City, State: Auburn, WA

Phone: 541-915-3452 Fax:

Collector: Natasha Date of Collection: 9/17-18/19

Client Project # 3350-001B

Email:

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	cPAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	EDB, EDC, NAPTH, MTBE	Hex Chrom	Field Notes	Collected
1	BH19-3	3	15:50	soil	2 Voa, 2-4oz															Hold	9/17
2	BH19-H2O	—		Water	3 Voa, 1 amber															Hold	"
3	BH19-9	9	16:10	soil	2 Voa, 2-4oz															Hold	"
4	BH20-2	2	16:45	"	"															Hold	"
5	BH20-9	9	16:40	"	" "															Hold	"
6	BH20-H20	—	16:55	water	3 Voa, 1 amber															Hold	"
7	MW1-7	7	9:10	soil	2 Voa, 2-4oz		X	X			X						(X)				9/18
8	MW1-10	10	9:15	"	"															Hold	
9	MW2-2	2	12:00	"	"															Hold	
10	MW2-8	8	11:55	"	"		X	X			X						(X)				
11	BH21-H20	—	13:40	Water	3 Voa, 1 amber															Hold	
12	BH21-1.5	1.5	13:30	soil	2 Voa, 2-4oz		X	X			X						(X)	(X)		11-13-19 Added HexChrom via email per Max STD	
13	BH21-8	8	13:35	"	"															Hold	
14	BH22-H2O	—	14:30	Water																Hold	
15	BH22-2'	2'	14:40	soil			X	X			X						(X)				
16	BH22-9'	9'	14:45	"																Hold	
17																					

Relinquished by: Date / Time 9/18/19 17:

Received by: Date / Time 9/18/19 1705

Relinquished by: Date / Time

Received by: Date / Time

Relinquished by: Date / Time

Received by: Date / Time

Sample Receipt

Good Condition? Y N

Temp. °C

Seals Intact? Y N N/A

Total Number of Containers

Remarks:
(X) added by K. Thomas via email 9-24-19

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

Libby Environmental, Inc.

Chain of Custody Record

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4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 9/18/19 Page: 2 of 2

Client: RN

Project Manager: Kari Thomas

Address:

Project Name: Kia Sunset

City: State: Zip:

Location: Kia Dealership City, State: Auburn, WA

Phone: 541-915-3452 Fax:

Collector: Natasha Date of Collection: 9/18/19

Client Project # 3350-001B

Email:

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	EDB, EDC, Napth, MTBE	Field Notes
1	BH23-H_2O	—	16:50	Water															Hold
2	BH23-2	2'	16:40	Soil			X	X			X						(X)		Analyse Fix Base
3	BH23-8	8'	16:45	Soil			X	X			X						(X)		" " changed to BH23-8 Per Data Telecon 9/19/19
4	BH24-5'	5'	17:15	Soil			X	X			X						(X)		" "
5																			
6																			
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[signature]	9/18/19 17:05	[signature]	9/18/19 1705
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N	
Temp.		°C	
Seals Intact?	Y	N	N/A
Total Number of Containers			

Remarks: 3 samples to be analyzed ML Fix Base

TAT: 24HR 48HR (5-DAY)

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client egrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a cout of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

SPECTRA Laboratories ...Where experience matters

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

11/22/2019

Libby Environmental, Inc.
3322 South Bay Road NE
Olympia, WA 98506

Project:	Sunset Kia
Client ID:	BH21-1.5
Sample Matrix:	Soil
Date Sampled:	09/18/2019
Date Received:	11/15/2019
Spectra Project:	2019110426
Spectra Number:	1

Analyte	Result	Units	Method
Hexavalent Chromium	<0.52	mg/Kg	SW846 7196A

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

SPECTRA Laboratories ...Where experience matters

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

November 22, 2019

Libby Environmental, Inc
3322 South Bay Rd NE
Olympia, WA 98506

Units: mg/Kg
Spectra Project: 2019110426
Applies to Spectra #'s : 1

QUALITY CONTROL RESULTS

Hexavalent Chromium in Soil/Solid - Method SM 3500 Cr-D/ SW846 7196A

Method Blank

Date Analyzed: 11/22/2019 Date Extracted: 11/22/2019

	Result
Hexavalent Chromium	<0.1

Blank Spike (LCS)

Date Analyzed: 11/22/2019 Date Extracted: 11/22/2019

	Spike Added	LCS Conc.	LCS %Rec
Hexavalent Chromium	0.1	0.09	90

LCS Recovery limits 73-120%

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Analyzed: 11/22/2019 Date Extracted: 11/22/2019
Sample Spiked: 2019110426-1

	Sample Conc.	Spike Conc.	MS Conc.	MS %Rec	MSD Conc	MSD %Rec	RPD
Hexavalent Chromium	<0.1	0.50	0.525	105	0.565	113	2.9

RPD Limit 20

SPECTRA LABORATORIES

Jeffrey Cooper
Laboratory Manager

Libby Environmental, Inc.

~~4139 Libby Road~~ 3322 South Bay Rd NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Chain of Custody Record

www.LibbyEnvironmental.com

2019110426

Date: 11-14-19 Page: 1 of 1

Client: Libby Environmental, Inc.
Project Manager: Sherry Chilcott
Address: See above
Project Name: ~~Stckd~~ Sunset Kia
City: State: Zip:
Location: City, State: WA
Phone: Fax:
Collector: Date of Collection: 9/18/19
Client Project #
Email: Libbyenv@Gmail.com

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	Hex. Chrom			Field Notes
1	BH21-1.5	1.5	1330	Soil	4oz													X			*Out of Hold but that ok -KD ✓
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					
16																					
17																					

Relinquished by:	Date / Time	Received by:	Date / Time
KDP	11/14/19 1200	UPS	
Relinquished by: UPS	Date / Time	Received by: Spectra	Date / Time 11.15.19 11:14am
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y N
Temp.	°C
Seals Intact?	Y N N/A
Total Number of Containers	1

Remarks: Std TAT

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

October 23, 2019

Kari Thomas
Robinson Noble
2105 South C Street
Tacoma, WA 98402

Dear Ms. Thomas:

Please find enclosed the analytical data report for the Sunset Kia Project located in Auburn, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

Libby Environmental, Inc.

Chain of Custody Record

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3322 South Bay Road NE
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Ph: 360-352-2110
Fax: 360-352-4154

Date: 10/18/19 Page: 1 of 1

Client: Robinson Noble
Address: 2105 S C Street
City: Tacoma State: Wa Zip: 98402
Phone: 253 475 7711 Fax:
Client Project # 3350-001B

Project Manager: Kari Thomas
Project Name: Sunset Kia
Location: Kia Sunset ~~@~~ Auburn City, State: Auburn, WA
Collector: NRG Date of Collection: 10/18/19
Email:

Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260 MTCA	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	cPAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals Total	RCRA 8 Metals			Field Notes
1 MW 1			Water	3 VOA Pres unpres FF 1/2 Amber	X	X				X					X				* Hold for Dissolved
2 MW 2					X	X				X					X				
3 MW 3					X	X				X					X				
4 MW 4E					X	X				X					X				
5																			
6																			
7																			
8																			
9																			
10																			
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13																			
14																			
15																			
16																			
17																			

Relinquished by:	Date / Time	Received by:	Date / Time
[signature]	10/18/19 1503	[signature]	10/18/19 1503
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N
Cooler Temp.		°C
Sample Temp.		°C
Total Number of Containers		

Remarks: EIM

TAT: 24HR 48HR (5-DAY)

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a cout of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

Libby Environmental, Inc.

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Olympia, WA 98506
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Email: libbyenv@gmail.com

SUNSET KIA PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191018-5
Client Project # 3350-001B

Volatile Organic Compounds by EPA Method 8260D in Water

Sample Description		Method Blank	MW1	MW2	MW3	MW4E
Date Sampled		N/A	10/18/19	10/18/19	10/18/19	10/18/19
Date Analyzed	PQL (µg/L)	10/21/19 (µg/L)	10/21/19 (µg/L)	10/21/19 (µg/L)	10/21/19 (µg/L)	10/21/19 (µg/L)
Benzene	1.0	nd	nd	nd	265	nd
Toluene	1.0	nd	nd	nd	37	nd
Ethylbenzene	1.0	nd	nd	nd	670	nd
Total Xylenes	2.0	nd	nd	nd	2850	nd
1,2-Dichloroethane (EDC)	1.0	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.01	nd	nd	nd	nd	nd
Total Naphthalenes	5.0	nd	nd	nd	77	nd
Methyl *tert*- Butyl Ether (MTBE)	5.0	nd	nd	nd	nd	nd
Surrogate Recovery						
Dibromofluoromethane		118	104	112	108	123
1,2-Dichloroethane-d4		126	107	123	116	132
Toluene-d8		101	92	93	102	103
4-Bromofluorobenzene		107	92	92	101	97

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

* ANALYZED BY SIM
ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

Libby Environmental, Inc.

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FAX: (360) 352-4154
Email: libbyenv@gmail.com

SUNSET KIA PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191018-5
Client Project # 3350-001B

QA/QC for Volatile Organic Compounds by EPA Method 8260D in Water

Matrix Spike Sample Identification: L191017-1

	Spiked Conc. (µg/L)	MS Response (µg/L)	MSD Response (µg/L)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Methyl *tert*- Butyl Ether (MTBE)	5.0	5.0	6.1	99	122	20.6	65-135	
Benzene	5.0	4.9	5.2	98	105	6.6	65-135	
1,2-Dichloroethane (EDC)	5.0	5.2	6.4	104	128	20.6	65-135	
Toluene	5.0	4.8	5.2	97	103	6.4	65-135	
1,2-Dibromoethane (EDB)	5.0	4.7	5.5	94	109	15.4	65-135	
Ethylbenzene	5.0	5.4	5.2	109	104	4.3	65-135	
Total Xylenes	15.0	15.5	17.5	104	117	11.9	65-135	
Naphthalenes	5.0	3.6	5.0	72	100	31.9	65-135	

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	111	118	65-135
1,2-Dichloroethane-d4	108	124	65-135
Toluene-d8	97	99	65-135
4-Bromofluorobenzene	101	103	65-135

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Sherry Chilcutt

Laboratory Control Sample

	Spiked Conc. (µg/L)	LCS Response (µg/L)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Methyl *tert*- Butyl Ether (MTBE)	5.0	5.9	119	80-120	
Benzene	5.0	4.7	94	80-120	
1,2-Dichloroethane (EDC)	5.0	5.9	118	80-120	
Toluene	5.0	4.8	97	80-120	
1,2-Dibromoethane (EDB)	5.0	5.9	118	80-120	
Ethylbenzene	5.0	4.9	98	80-120	
Total Xylenes	15.0	14.7	98	80-120	
Naphthalene	5.0	6.0	120	80-120	

Surrogate Recovery			
Dibromofluoromethane	113	65-135	
1,2-Dichloroethane-d4	123	65-135	
Toluene-d8	100	65-135	
4-Bromofluorobenzene	105	65-135	

ANALYSES PERFORMED BY: Sherry Chilcutt

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SUNSET KIA PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191018-5
Client Project # 3350-001B

Analyses of Gasoline (NWTPH-Gx) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (µg/L)
Method Blank	10/21/19	101	nd
MW1	10/21/19	92	nd
MW2	10/21/19	93	nd
MW3	10/21/19	102	14300
MW4E	10/21/19	103	nd
Practical Quantitation Limit			100

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Toluene-d8): 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

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Robinson Noble
Auburn, Washington
Libby Project # L191018-5
Client Project # 3350-001B

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (µg/L)	Oil (µg/L)
Method Blank	10/21/19	112	nd	nd
MW1	10/21/19	112	nd	nd
MW2	10/21/19	93	nd	nd
MW3	10/21/19	107	nd	nd
MW4E	10/21/19	116	nd	nd
Practical Quantitation Limit			200	400

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Evan Neims

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SUNSET KIA PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191018-5
Client Project # 3350-001B

Analyses of Total Metals in Water by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Arsenic (µg/L)
Method Blank	10/22/19	nd	nd	nd	nd
MW1	10/22/19	nd	nd	3.9	67
MW1 Dup	10/22/19	nd	nd	3.2	59
MW2	10/22/19	nd	nd	11	44
MW3	10/22/19	nd	nd	3.5	17
MW4E	10/22/19	11	nd	14	10
Practical Quantitation Limit		5.0	0.5	5.0	3.0

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Dirk Peterson

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SUNSET KIA PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191018-5
Client Project # 3350-001B

QA/QC for Total Metals in Water by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (% Recovery)	Cadmium (% Recovery)	Chromium (% Recovery)	Arsenic (% Recovery)
LCS	10/22/19	92%	112%	104%	116%
MW1 MS	10/22/19	95%	82%	92%	112%
MW1 MSD	10/22/19	94%	88%	95%	101%
RPD	10/22/19	1%	7%	3%	10%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Dirk Peterson

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SUNSET KIA PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191018-5
Client Project # 3350-001B

Analyses of Total Mercury in Water by EPA Method 7470

Sample Number	Date Analyzed	Mercury (µg/L)
Method Blank	10/23/19	nd
MW1	10/23/19	nd
MW1 Dup	10/23/19	nd
MW2	10/23/19	nd
MW3	10/23/19	nd
MW4E	10/23/19	nd
Practical Quantitation Limit		0.5

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Kodey Eley

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SUNSET KIA PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191018-5
Client Project # 3350-001B

QA/QC for Total Mercury by EPA Method 7470

Sample Number	Date Analyzed	Mercury (% Recovery)
LCS	10/23/19	108%
MW4E MS	10/23/19	92%
MW4E MSD	10/23/19	92%
RPD	10/23/19	0%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Kodey Eley

Libby Environmental, Inc.

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SUNSET KIA PROJECT
Robinson Noble
Libby Project # L191018-5
Date Received 10/18/2019
Time Received 3:03 PM

Received By KD

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody complete?	☑	Yes	☐	No		
2. How was the sample delivered?	☐	Hand Delivered	☑	Picked Up	☐	Shipped

Log In

3. Cooler or Shipping Container is present.	☑	Yes	☐	No	☐	N/A
4. Cooler or Shipping Container is in good condition.	☑	Yes	☐	No	☐	N/A
5. Cooler or Shipping Container has Custody Seals present.	☐	Yes	☑	No	☐	N/A
6. Was an attempt made to cool the samples?	☑	Yes	☐	No	☐	N/A
7. Temperature of cooler (0°C to 8°C recommended)	0.0 °C					
8. Temperature of sample(s) (0°C to 8°C recommended)	9.6 °C					
9. Did all containers arrive in good condition (unbroken)?	☑	Yes	☐	No		
10. Is it clear what analyses were requested?	☑	Yes	☐	No		
11. Did container labels match Chain of Custody?	☑	Yes	☐	No		
12. Are matrices correctly identified on Chain of Custody?	☑	Yes	☐	No		
13. Are correct containers used for the analysis indicated?	☑	Yes	☐	No		
14. Is there sufficient sample volume for indicated analysis?	☑	Yes	☐	No		
15. Were all containers properly preserved per each analysis?	☑	Yes	☐	No		
16. Were VOA vials collected correctly (no headspace)?	☑	Yes	☐	No	☐	N/A
17. Were all holding times able to be met?	☑	Yes	☐	No		

Discrepancies/ Notes

18. Was client notified of all discrepancies?	☐	Yes	☐	No	☑	N/A

Person Notified: _____ Date: _____

By Whom: _____ Via: _____

Regarding: _____

19. Comments. _____

Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

December 24, 2019

Kari Thomas
Robinson Noble
2105 South C Street
Tacoma, WA 98402

Dear Ms. Thomas:

Please find enclosed the analytical data report for the Sunset Kia-Mitsubishi Project located in Auburn, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

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Ph: 360-352-2110
Fax: 360-352-4154

Client: Robinson-Noble
Address: 2105 S. C St.
City: Tacoma State: WA Zip:
Phone: 253-475-7711 Fax:
Client Project # 3350-001C

Date: 12/16/19 Page: 1 of 1
Project Manager: Kari Thomas
Project Name: Sunset Kia-Mitsubishi
Location: 3301 Auburn Way N City, State: Auburn, WA
Collector: RWCM Date of Collection: 12/16 - 12/17
Email: KThomas@Robinson-Noble.com

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260 MTCA	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	Lead, Total Chromium		Field Notes
1	B25-2	2'	9:55	Soil	VOA/Jar															
2	B26-5	5'	10:25	Soil																
3	MW5-5	5'	11:05																	
4	MW6-9	9'	13:50																	
5	B27-5.5	5.5'	10:50																	12/17
6	MW7-5.5	5.5'	9:05																	12/17
7	B29-5	5'	11:35																	12/17
8	B28-6	6'	8:30																	12/17
9	B28-15	15'	10:25	Water	VOA/Amber															12/17 Temp Well
10	B27-12	12'	11:10																	12/17 Temp Well
11	B29-15	15'	12:00																	12/17 Temp Well
12																				
13																				
14																				
15																				
16																				
17																				

Relinquished by:	Date / Time	Received by:	Date / Time
Ryan Mel	12/17/19 14:35	KDL	12/17/19 1435
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N
Cooler Temp.		°C
Sample Temp.		°C
Total Number of Containers		

Remarks: GIM

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

Libby Environmental, Inc.

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191217-3
Client Project # 3350-001C

Volatile Organic Compounds by EPA Method 8260D in Soil

Sample Description		Method Blank	B25-2	B26-5	MW5-5	MW6-9	B27-5.5
Date Sampled		N/A	12/16/19	12/16/19	12/16/19	12/16/19	12/17/19
Date Analyzed	PQL	12/17/19	12/17/19	12/17/19	12/17/19	12/17/19	12/18/19
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	nd	0.052	nd	0.11	nd
Toluene	0.10	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	7.7	nd
Total Xylenes	0.15	nd	nd	nd	nd	0.17	nd
1,2-Dichloroethane (EDC)	0.03	nd	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.005	nd	nd	nd	nd	nd	nd
Total Naphthalenes	0.10	nd	0.23	0.15	nd	12	0.12
Methyl *tert*- Butyl Ether (MTBE)	0.05	nd	nd	nd	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		108	107	102	101	82	98
1,2-Dichloroethane-d4		98	96	96	95	93	92
Toluene-d8		97	96	96	96	96	98
4-Bromofluorobenzene		101	84	70	96	97	101

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

* ANALYZED BY SIM
ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191217-3
Client Project # 3350-001C

Volatile Organic Compounds by EPA Method 8260D in Soil

Sample Description		MW7-5.5	B29-5	B28-6	B28-6 Dup
Date Sampled		12/17/19	12/17/19	12/17/19	12/17/19
Date Analyzed	PQL	12/17/19	12/18/19	12/17/19	12/17/19
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	0.40	nd	0.27	0.25
Toluene	0.10	nd	nd	nd	nd
Ethylbenzene	0.05	1.4	nd	0.11	0.066
Total Xylenes	0.15	0.21	nd	nd	nd
1,2-Dichloroethane (EDC)	0.03	nd	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.005	nd	nd	nd	nd
Total Naphthalenes	0.10	1.6	nd	nd	nd
Methyl *tert*- Butyl Ether (MTBE)	0.05	nd	nd	nd	nd
Surrogate Recovery					
Dibromofluoromethane		82	95	97	97
1,2-Dichloroethane-d4		89	92	98	95
Toluene-d8		98	96	95	96
4-Bromofluorobenzene		72	101	108	97

"nd" Indicates not detected at listed detection limit.
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ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191217-3
Client Project # 3350-001C

QA/QC for Volatile Organic Compounds by EPA Method 8260D in Soil

Matrix Spike Sample Identification: B28-6

	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Methyl *tert*- Butyl Ether (MTBE)	0.25	0.29	0.28	115	111	3.8	65-135	
Benzene	0.25	0.27	0.31	108	124	13.8	65-135	
1,2-Dichloroethane (EDC)	0.25	0.26	0.27	103	109	5.6	65-135	
Toluene	0.25	0.27	0.30	110	121	9.6	65-135	
1,2-Dibromoethane (EDB)	0.25	0.20	0.21	78	84	7.2	65-135	
Ethylbenzene	0.25	0.29	0.28	118	112	4.9	65-135	
Total Xylenes	0.75	0.91	0.94	122	126	3.2	65-135	
Naphthalenes	0.25	0.31	0.21	125	85	38.1	65-135	R

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	93	97	65-135
1,2-Dichloroethane-d4	93	95	65-135
Toluene-d8	95	95	65-135
4-Bromofluorobenzene	98	99	65-135

ACCEPTABLE RPD IS 35%
"R" High relative percent difference observed.

ANALYSES PERFORMED BY: Paul Burke

Laboratory Control Sample

	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Methyl *tert*- Butyl Ether (MTBE)	0.25	0.27	108	80-120	
Benzene	0.25	0.27	108	80-120	
1,2-Dichloroethane (EDC)	0.25	0.27	106	80-120	
Toluene	0.25	0.27	107	80-120	
1,2-Dibromoethane (EDB)	0.25	0.22	87	80-120	
Ethylbenzene	0.25	0.29	115	80-120	
Total Xylenes	0.75	0.86	114	80-120	
Naphthalenes	0.25	0.29	114	80-120	

Surrogate Recovery			
Dibromofluoromethane	104	65-135	
1,2-Dichloroethane-d4	97	65-135	
Toluene-d8	95	65-135	
4-Bromofluorobenzene	102	65-135	

ANALYSES PERFORMED BY: Paul Burke

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191217-3
Client Project # 3350-001C

Analyses of Gasoline (NWTPH-Gx) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)
Method Blank	12/17/19	97%	nd
Method Blank	12/23/19	93%	nd
B25-2	12/18/19	95%	340
B26-5	12/17/19	96%	210
MW5-5	12/17/19	96%	nd
MW6-9	12/18/19	96%	3600
B27-5.5	12/18/19	98%	13
MW7-5.5	12/23/19	98%	1140
MW7-5.5 Dup	12/23/19	97%	1300
B29-5	12/18/19	96%	11
B28-6	12/17/19	95%	236
B28-6 Dup	12/17/19	96%	185
Practical Quantitation Limit			10

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Toluene-d8): 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke & Sherry Chilcutt

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191217-3
Client Project # 3350-001C

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	12/19/19	97	nd	nd
B25-2	12/19/19	93	nd	nd
B25-2 Dup	12/19/19	93	nd	nd
B26-5	12/19/19	93	nd	nd
MW5-5	12/19/19	91	nd	nd
MW6-9	12/19/19	84	nd	nd
B27-5.5	12/19/19	89	nd	nd
MW7-5.5	12/19/19	90	nd	nd
B29-5	12/19/19	93	nd	nd
B28-6	12/19/19	88	194	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Evan Neims

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191217-3
Client Project # 3350-001C

Analyses of Total Metals in Soil by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (mg/kg)	Chromium (mg/kg)
Method Blank	12/19/19	nd	nd
B25-2	12/19/19	nd	8.1
B26-5	12/19/19	nd	6.7
MW5-5	12/19/19	nd	6.8
MW6-9	12/19/19	nd	5.5
B27-5.5	12/19/19	nd	nd
MW7-5.5	12/19/19	nd	nd
B29-5	12/19/19	nd	26.0
B28-6	12/19/19	nd	6.6
B28-6 Dup	12/19/19	nd	6.8
Practical Quantitation Limit		5.0	5.0

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Dirk Peterson

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191217-3
Client Project # 3350-001C

QA/QC for Total Metals in Soil by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (% Recovery)	Chromium (% Recovery)
LCS	12/19/19	114%	99%
B26-6 MS	12/19/19	86%	115%
B26-6 MSD	12/19/19	100%	114%
RPD	12/19/19	15%	1%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Dirk Peterson

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SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191217-3
Client Project # 3350-001C

Volatile Organic Compounds by EPA Method 8260D in Water

Sample Description		Method Blank	B28-15	B27-12	B29-15	B29-15 Dup
Date Sampled		N/A	12/17/19	12/17/19	12/17/19	12/17/19
Date Analyzed	PQL (µg/L)	12/18/19 (µg/L)	12/18/19 (µg/L)	12/18/19 (µg/L)	12/18/19 (µg/L)	12/18/19 (µg/L)
Benzene	1.0	nd	490	2.2	nd	nd
Toluene	1.0	nd	4.1	1.2	nd	nd
Ethylbenzene	1.0	nd	22	nd	nd	nd
Total Xylenes	2.0	nd	12	2.8	nd	nd
1,2-Dichloroethane (EDC)	1.0	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.01	nd	nd	nd	nd	nd
Total Naphthalenes	5.0	nd	nd	nd	nd	nd
Methyl *tert*- Butyl Ether (MTBE)	5.0	nd	nd	nd	nd	nd
Surrogate Recovery						
Dibromofluoromethane		101	84	92	98	97
1,2-Dichloroethane-d4		90	86	92	93	90
Toluene-d8		98	85	91	98	98
4-Bromofluorobenzene		93	98	99	102	102

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

* ANALYZED BY SIM
ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191217-3
Client Project # 3350-001C

QA/QC for Volatile Organic Compounds by EPA Method 8260D in Water

Matrix Spike Sample Identification: B29-15

	Spiked Conc. (µg/L)	MS Response (µg/L)	MSD Response (µg/L)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Methyl *tert*- Butyl Ether (MTBE)	5.0	5.5	5.4	110	108	1.5	65-135	
Benzene	5.0	5.4	5.6	107	112	4.2	65-135	
1,2-Dichloroethane (EDC)	5.0	4.8	5.0	97	99	2.5	65-135	
Toluene	5.0	5.2	5.3	104	106	1.5	65-135	
1,2-Dibromoethane (EDB)	5.0	3.9	4.1	78	81	4.2	65-135	
Ethylbenzene	5.0	5.8	6.0	116	120	3.5	65-135	
Total Xylenes	15.0	16.5	17.5	110	117	6.1	65-135	
Naphthalenes	5.0	6.0	6.0	119	121	1.1	65-135	

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	101	102	65-135
1,2-Dichloroethane-d4	90	89	65-135
Toluene-d8	97	97	65-135
4-Bromofluorobenzene	101	100	65-135

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Paul Burke

Laboratory Control Sample

	Spiked Conc. (µg/L)	LCS Response (µg/L)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Methyl *tert*- Butyl Ether (MTBE)	5.0	5.8	115	80-120	
Benzene	5.0	5.5	110	80-120	
1,2-Dichloroethane (EDC)	5.0	5.1	103	80-120	
Toluene	5.0	5.5	110	80-120	
1,2-Dibromoethane (EDB)	5.0	4.7	95	80-120	
Ethylbenzene	5.0	6.0	120	80-120	
Total Xylenes	15.0	17.5	116	80-120	
Naphthalenes	5.0	4.3	87	80-120	

Surrogate Recovery			
Dibromofluoromethane	101	65-135	
1,2-Dichloroethane-d4	93	65-135	
Toluene-d8	97	65-135	
4-Bromofluorobenzene	101	65-135	

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

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Email: libbyenv@gmail.com

SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191217-3
Client Project # 3350-001C

Analyses of Gasoline (NWTPH-Gx) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (µg/L)
Method Blank	12/18/19	98%	nd
B28-15	12/18/19	85%	3090
B27-12	12/18/19	91%	2560
B29-15	12/18/19	98%	nd
B29-15 Dup	12/18/19	98%	nd
Practical Quantitation Limit			100

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Toluene-d8): 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

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Olympia, WA 98506
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Email: libbyenv@gmail.com

SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191217-3
Client Project # 3350-001C

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (µg/L)	Oil (µg/L)
Method Blank	12/19/19	95	nd	nd
B28-15	12/19/19	92	nd	nd
B27-12	12/19/19	97	nd	nd
B29-15	12/19/19	97	nd	nd
B29-15 Dup	12/19/19	92	nd	nd
Practical Quantitation Limit			200	400

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Evan Neims

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Libby Project # L191217-3
Date Received 12/17/2019
Time Received 2:35 PM

Received By KD

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody complete?	☑ Yes	☐ No	
2. How was the sample delivered?	☐ Hand Delivered	☑ Picked Up	☐ Shipped

Log In

3. Cooler or Shipping Container is present.	☑ Yes	☐ No	☐ N/A
4. Cooler or Shipping Container is in good condition.	☑ Yes	☐ No	☐ N/A
5. Cooler or Shipping Container has Custody Seals present.	☐ Yes	☑ No	☐ N/A
6. Was an attempt made to cool the samples?	☑ Yes	☐ No	☐ N/A
7. Temperature of cooler (0°C to 8°C recommended)	0.0 °C		
8. Temperature of sample(s) (0°C to 8°C recommended)	10.6 °C		
9. Did all containers arrive in good condition (unbroken)?	☑ Yes	☐ No	
10. Is it clear what analyses were requested?	☑ Yes	☐ No	
11. Did container labels match Chain of Custody?	☑ Yes	☐ No	
12. Are matrices correctly identified on Chain of Custody?	☑ Yes	☐ No	
13. Are correct containers used for the analysis indicated?	☑ Yes	☐ No	
14. Is there sufficient sample volume for indicated analysis?	☑ Yes	☐ No	
15. Were all containers properly preserved per each analysis?	☑ Yes	☐ No	
16. Were VOA vials collected correctly (no headspace)?	☑ Yes	☐ No	☐ N/A
17. Were all holding times able to be met?	☑ Yes	☐ No	

Discrepancies/ Notes

18. Was client notified of all discrepancies?	☐ Yes	☐ No	☑ N/A

Person Notified: _____ Date: _____

By Whom: _____ Via: _____

Regarding: _____

19. Comments. _____

Libby Environmental, Inc.
3322 South Bay Road NE • Olympia, WA 98506-2957

January 2, 2020

Kari Thomas
Robinson Noble
2105 South C Street
Tacoma, WA 98402

Dear Ms. Thomas:

Please find enclosed the analytical data report for the Sunset Kia-Mitsubishi Project located in Auburn, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Client: Robinson-Noble
Address: 2105 S. C St.
City: Tacoma State: WA Zip:
Phone: 253-475-7711 Fax:
Client Project # 3350-001C

Date: 12/16/19 Page: 1 of 1
Project Manager: Kari Thomas
Project Name: Sunset Kia-Mitsubishi
Location: 3301 Auburn Way N City, State: Auburn, WA
Collector: RWCM Date of Collection: 12/16 - 12/17
Email: KThomas@Robinson-Noble.com

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260 MTCA	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	Lead	Total Chromium / Hex Chrome		Field Notes
1	B25-2	2'	9:55	Soil	VOA / 1402																
2	B26-5	5'	10:25	Soil																	
3	MW5-5	5'	11:05																		
4	MW6-9	9'	13:50																		
5	B27-5.5	5.5'	10:50																		12/17
6	MW7-5.5	5.5'	9:05																		12/17
7	B29-5	5'	11:38																X		12/17
8	B28-6	6'	8:30												mm						12/17
9	B28-15	15'	10:25	Water	VOA/Amber																12/17 Temp Well
10	B27-12	12'	11:10																		12/17 Temp Well
11	B29-15	15'	12:00																		12/17 Temp Well
12																					
13																					
14																					
15																					
16																					
17																					

Relinquished by:	Date / Time	Received by:	Date / Time
[signature]	12/17/19 14:35	[signature]	12/17/19 1435

Sample Receipt

Good Condition?	Y	N
Cooler Temp.		°C
Sample Temp.		°C
Total Number of Containers		

Remarks:
X added M K. Thomas email 12/20/19
VXA
CIM
STD TAT

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

SUNSET KIA-MITSUBISHI PROJECT
Robinson Noble
Libby Project # L191217-3B
Date Received 12/17/2019
Time Received 2:35 PM

Received By KD

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody complete?	☑ Yes	☐ No	
2. How was the sample delivered?	☐ Hand Delivered	☑ Picked Up	☐ Shipped

Log In

3. Cooler or Shipping Container is present.	☑ Yes	☐ No	☐ N/A
4. Cooler or Shipping Container is in good condition.	☑ Yes	☐ No	☐ N/A
5. Cooler or Shipping Container has Custody Seals present.	☐ Yes	☑ No	☐ N/A
6. Was an attempt made to cool the samples?	☑ Yes	☐ No	☐ N/A
7. Temperature of cooler (0°C to 8°C recommended)	0.0 °C		
8. Temperature of sample(s) (0°C to 8°C recommended)	10.6 °C		
9. Did all containers arrive in good condition (unbroken)?	☑ Yes	☐ No	
10. Is it clear what analyses were requested?	☑ Yes	☐ No	
11. Did container labels match Chain of Custody?	☑ Yes	☐ No	
12. Are matrices correctly identified on Chain of Custody?	☑ Yes	☐ No	
13. Are correct containers used for the analysis indicated?	☑ Yes	☐ No	
14. Is there sufficient sample volume for indicated analysis?	☑ Yes	☐ No	
15. Were all containers properly preserved per each analysis?	☑ Yes	☐ No	
16. Were VOA vials collected correctly (no headspace)?	☑ Yes	☐ No	☐ N/A
17. Were all holding times able to be met?	☑ Yes	☐ No	

Discrepancies/ Notes

18. Was client notified of all discrepancies?	☐ Yes	☐ No	☑ N/A

Person Notified: _____ Date: _____

By Whom: _____ Via: _____

Regarding: _____

19. Comments. _____

SPECTRA Laboratories ...Where experience matters

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

01/06/2020

Libby Environmental, Inc.
3322 South Bay Road NE
Olympia, WA 98506

Project: Sunset Kia
Sample Matrix: Soil
Date Sampled:
Date Received: 12/17/2019
Spectra Project: 2019120510

Client ID	Spectra #	Analyte	Result	Units	Method
B29-5	7	Hexavalent Chromium	<0.02	mg/Kg	SW846 7196A

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

aZmlh

SPECTRA Laboratories ...Where experience matters
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January 2, 2020

Libby Environmental
4139 Libby Rd NE
Olympia, WA 98506

Units: mg/Kg
Spectra Project: 2019120510
Applies to Spectra # 7

QUALITY CONTROL RESULTS

Hexavalent Chromium in Soil/Solid - Method SM 3500 Cr-D/ SW846 7196A

Method Blank

Date Analyzed: 12/31/2019

	Result
Hexavalent Chromium	<0.01

Blank Spike (LCS)

Date Analyzed: 12/31/2019

	Spike Added	LCS Conc.	LCS %Rec
Hexavalent Chromium	0.1	0.119	119

LCS Recovery limits 73-120%

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Analyzed: 12/31/2019
Sample Spiked: 2019120778-1

	Sample Conc.	Spike Conc.	MS Conc.	MS %Rec	MSD Conc	MSD %Rec	RPD
Hexavalent Chromium	<0.01	0.1	0.09	90	0.065	65	32.3

Recovery Limits 75-125%
RPD Limit 20

SPECTRA LABORATORIES

Jeffrey Cooper
Laboratory Manager

Libby Environmental, Inc.
3322 South Bay Road NE • Olympia, WA 98506-2957

January 7, 2020

Kari Thomas
Robinson Noble
2105 South C Street
Tacoma, WA 98402

Dear Ms. Thomas:

Please find enclosed the analytical data report for the Sunset Kia-Mitsubishi Project located in Auburn, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Client: Robinson - Noble
Address: 2105 S. C St
City: Tacoma State: WA Zip:
Phone: 253-475-7711 Fax:
Client Project # 3350-001C

Date: 12/23/2019 Page: 1 of 1
Project Manager: Kari Thomas
Project Name: Sunset Kia/Mitsubishi
Location: 3351 Auburn Way N City, State: Auburn, WA
Collector: RWCM Date of Collection: 12/20/19
Email: KThomas@robinson-noble.com

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260 MTCA	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	Total Chromium, Lead	Total Hg, Cd, As	Field Notes
1	MW1		11:27	Water	VOA/Amber/Poly													X		Hold for additional Metals
2	MW2		12:37															X		
3	MW4E		14:00															X		
4	MW5		15:07															X		
5	MW7		16:13															X		
6	MW3		17:20															X		
7	MW6		18:25															X		
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				

Relinquished by:	Date / Time	Received by:	Date / Time
Ryan Winkel	12/23/19 11:15	[signature]	12-23-19 1115
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N
Cooler Temp.		°C
Sample Temp.		°C
Total Number of Containers		

Remarks: *Added 12/31/19 by Ryan Winkel via email. -KD
EIM

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

Libby Environmental, Inc.

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Email: libbyenv@gmail.com

SUNSET KIA/MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191223-2
Client Project # 3350-001C

Volatile Organic Compounds by EPA Method 8260D in Water

Sample Description		Method Blank	Method Blank	MW1	MW1 Dup	MW2	MW4E
Date Sampled		N/A	N/A	12/20/19	12/20/19	12/20/19	12/20/19
Date Analyzed	PQL (µg/L)	12/23/19 (µg/L)	12/24/19 (µg/L)	12/23/19 (µg/L)	12/23/19 (µg/L)	12/23/19 (µg/L)	12/23/19 (µg/L)
Benzene	1.0	nd	nd	nd	nd	nd	nd
Toluene	1.0	nd	nd	nd	nd	nd	nd
Ethylbenzene	1.0	nd	nd	nd	nd	nd	nd
Total Xylenes	2.0	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane (EDC)	1.0	nd	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.01	nd	nd	nd	nd	nd	nd
Total Naphthalenes	5.0	nd	nd	nd	nd	nd	nd
Methyl *tert*- Butyl Ether (MTBE)	5.0	nd	nd	nd	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		104	115	111	108	110	108
1,2-Dichloroethane-d4		119	117	118	119	120	124
Toluene-d8		96	88	87	95	99	98
4-Bromofluorobenzene		93	96	99	90	91	88

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

* ANALYZED BY SIM
ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington & Sherry Chilcutt

Libby Environmental, Inc.

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Olympia, WA 98506
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SUNSET KIA/MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191223-2
Client Project # 3350-001C

Volatile Organic Compounds by EPA Method 8260D in Water

Sample Description		MW5	MW7	MW3	MW3 Dup	MW6
Date Sampled		12/20/19	12/20/19	12/20/19	12/20/19	12/20/19
Date Analyzed	PQL (µg/L)	12/23/19 (µg/L)	12/24/19 (µg/L)	12/24/19 (µg/L)	12/24/19 (µg/L)	12/24/19 (µg/L)
Benzene	1.0	nd	8.1	229	213	0.8 J
Toluene	1.0	nd	nd	61.0	79.9	nd
Ethylbenzene	1.0	nd	nd	1180	1040	3.5
Total Xylenes	2.0	nd	nd	5370	4950	nd
1,2-Dichloroethane (EDC)	1.0	nd	nd	nd	<10	nd
1,2-Dibromoethane (EDB) *	0.01	nd	nd	nd	<0.10	nd
Total Naphthalenes	5.0	nd	nd	164	177	nd
Methyl *tert*- Butyl Ether (MTBE)	5.0	nd	nd	nd	<50	nd
Surrogate Recovery						
Dibromofluoromethane		110	118	101	115	105
1,2-Dichloroethane-d4		127	110	92	108	95
Toluene-d8		97	99	99	100	99
4-Bromofluorobenzene		89	88	89	103	88

“J” Result is less than the PQL but greater than the MDL. Reported value is approximate.
"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

* ANALYZED BY SIM
ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington & Sherry Chilcutt

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
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Email: libbyenv@gmail.com

SUNSET KIA/MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191223-2
Client Project # 3350-001C

QA/QC for Volatile Organic Compounds by EPA Method 8260D in Water

Matrix Spike Sample Identification: MW4E

	Spiked Conc. (µg/L)	MS Response (µg/L)	MSD Response (µg/L)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Methyl *tert*- Butyl Ether (MTBE)	5.0	3.8	3.8	76	76	0.0	65-135	
Benzene	5.0	4.1	4.0	82	80	2.5	65-135	
1,2-Dichloroethane (EDC)	5.0	4.7	4.2	94	84	11.2	65-135	
Toluene	5.0	4.0	3.9	80	78	2.5	65-135	
1,2-Dibromoethane (EDB)	5.0	3.8	3.9	76	78	2.6	65-135	
Ethylbenzene	5.0	4.0	5.0	80	100	22.2	65-135	
Total Xylenes	15.0	12.2	16.1	81	107	27.6	65-135	
Naphthalene	5.0	2.4	4.0	48	80	50.0	65-135	S, R

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	108	101	65-135
1,2-Dichloroethane-d4	122	107	65-135
Toluene-d8	102	98	65-135
4-Bromofluorobenzene	95	92	65-135

ACCEPTABLE RPD IS 35%

"R" - High relative percent difference observed.
"S" - Spike recovery outside accepted recovery limits.

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

SUNSET KIA/MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191223-2
Client Project # 3350-001C

Laboratory Control Sample

	Spiked Conc. (µg/L)	LCS Response (µg/L)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Methyl *tert*- Butyl Ether (MTBE)	5.0	4.2	84	80-120	
Benzene	5.0	4.5	90	80-120	
1,2-Dichloroethane (EDC)	5.0	5.1	102	80-120	
Toluene	5.0	4.1	82	80-120	
1,2-Dibromoethane (EDB)	5.0	4.1	82	80-120	
Ethylbenzene	5.0	4.4	88	80-120	
Total Xylenes	15.0	13.3	89	80-120	
Naphthalene	5.0	4.3	86	80-120	
Surrogate Recovery					
Dibromofluoromethane			112	65-135	
1,2-Dichloroethane-d4			122	65-135	
Toluene-d8			92	65-135	
4-Bromofluorobenzene			100	65-135	

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

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SUNSET KIA/MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191223-2
Client Project # 3350-001C

QA/QC for Volatile Organic Compounds by EPA Method 8260D in Water

Matrix Spike Sample Identification: L191218-5

	Spiked Conc. (µg/L)	MS Response (µg/L)	MSD Response (µg/L)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Methyl *tert*- Butyl Ether (MTBE)	5.0	4.6	5.3	92	106	14.1	65-135	
Benzene	5.0	5.0	5.1	100	102	2.0	65-135	
1,2-Dichloroethane (EDC)	5.0	4.6	5.4	92	108	16.0	65-135	
Toluene	5.0	5.2	5.4	104	108	3.8	65-135	
1,2-Dibromoethane (EDB)	5.0	5.1	5.4	102	108	5.7	65-135	
Ethylbenzene	5.0	6.0	5.8	120	116	3.4	65-135	
Total Xylenes	15.0	17.5	18.9	117	126	7.7	65-135	
Naphthalene	5.0	2.8	6.0	56	119	72.1	65-135	R, S

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	110	115	65-135
1,2-Dichloroethane-d4	98	107	65-135
Toluene-d8	99	100	65-135
4-Bromofluorobenzene	100	105	65-135

ACCEPTABLE RPD IS 35%
"R" - High relative percent difference observed.
"S" - Spike recovery outside accepted recovery limits.

ANALYSES PERFORMED BY: Sherry Chilcutt

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SUNSET KIA/MITSUBISHI PROJECT
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Client Project # 3350-001C

Laboratory Control Sample

	Spiked Conc. (µg/L)	LCS Response (µg/L)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Methyl *tert*- Butyl Ether (MTBE)	5.0	5.6	112	80-120	
Benzene	5.0	4.8	96	80-120	
1,2-Dichloroethane (EDC)	5.0	5.9	118	80-120	
Toluene	5.0	4.4	88	80-120	
1,2-Dibromoethane (EDB)	5.0	5.9	118	80-120	
Ethylbenzene	5.0	5.0	100	80-120	
Total Xylenes	15.0	14.9	99	80-120	
Naphthalene	5.0	5.2	104	80-120	
Surrogate Recovery					
Dibromofluoromethane			113	65-135	
1,2-Dichloroethane-d4			114	65-135	
Toluene-d8			90	65-135	
4-Bromofluorobenzene			103	65-135	

ANALYSES PERFORMED BY: Sherry Chilcutt

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SUNSET KIA/MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191223-2
Client Project # 3350-001C

Analyses of Gasoline (NWTPH-Gx) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (µg/L)
Method Blank	12/23/19	88%	nd
Method Blank	12/24/19	96%	nd
MW1	12/23/19	79%	nd
MW1 Dup	12/23/19	87%	nd
MW2	12/23/19	91%	nd
MW4E	12/23/19	89%	nd
MW5	12/23/19	89%	960
MW7	12/24/19	99%	230
MW3	12/24/19	99%	23800
MW3 Dup	12/24/19	99%	27600
MW6	12/24/19	99%	140
Practical Quantitation Limit			100

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Toluene-d8): 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington & Sherry Chilcutt

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SUNSET KIA/MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191223-2
Client Project # 3350-001C

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (µg/L)	Oil (µg/L)
Method Blank	12/23/19	78	nd	nd
MW1	12/23/19	78	nd	nd
MW2	12/23/19	75	nd	nd
MW4E	12/23/19	76	nd	nd
MW5	12/23/19	78	nd	nd
MW7	12/23/19	79	nd	nd
MW3	12/23/19	79	nd	nd
MW6	12/23/19	79	nd	nd
Practical Quantitation Limit			200	400

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Evan Neims

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SUNSET KIA/MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191223-2
Client Project # 3350-001C

Analyses of Total Metals in Water by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (µg/L)	Chromium (µg/L)
Method Blank	12/24/19	nd	nd
MW1	12/24/19	nd	nd
MW1 Dup	12/24/19	nd	nd
MW2	12/24/19	nd	6.6
MW4E	12/24/19	nd	nd
MW5	12/24/19	nd	nd
MW7	12/24/19	nd	nd
MW3	12/24/19	nd	nd
MW6	12/24/19	nd	nd
Practical Quantitation Limit		5.0	5.0

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Dirk Peterson

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SUNSET KIA/MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191223-2
Client Project # 3350-001C

QA/QC for Total Metals in Water by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (% Recovery)	Chromium (% Recovery)
LCS	12/24/19	114%	97%
MW1 MS	12/24/19	97%	104%
MW1 MSD	12/24/19	101%	104%
RPD	12/24/19	4%	0%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Dirk Peterson

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SUNSET KIA/MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191223-2
Client Project # 3350-001C

Analyses of Total Metals in Water by EPA Method 7010 Series

Sample Number	Date Analyzed	Chromium (µg/L)	Arsenic (µg/L)
Method Blank	1/3/20	nd	nd
MW1	1/3/20	nd	40
MW2	1/3/20	nd	4.2
MW4E	1/3/20	nd	8.8
MW4E Dup	1/3/20	nd	12
MW5	1/3/20	nd	67
MW7	1/3/20	nd	10
MW3	1/3/20	nd	nd
MW6	1/3/20	nd	8.2
Practical Quantitation Limit		5.0	3.0

"nd" Indicates not detected at the listed detection limits.

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SUNSET KIA/MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191223-2
Client Project # 3350-001C

QA/QC for Total Metals in Water by EPA Method 7010 Series

Sample Number	Date Analyzed	Chromium (% Recovery)	Arsenic (% Recovery)
LCS	1/3/20	85%	113%
MW4E MS	1/3/20	83%	110%
MW4E MSD	1/3/20	87%	110%
RPD	1/3/20	5%	0%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Dirk Peterson

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SUNSET KIA/MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191223-2
Client Project # 3350-001C

Analyses of Total Mercury in Water by EPA Method 7470

Sample Number	Date Analyzed	Mercury (µg/L)
Method Blank	1/3/20	nd
MW1	1/3/20	nd
MW2	1/3/20	nd
MW4E	1/3/20	nd
MW5	1/3/20	nd
MW7	1/3/20	nd
MW3	1/3/20	nd
MW6	1/3/20	nd
MW6 Dup	1/3/20	nd
	1/3/20	nd
	1/3/20	nd
Practical Quantitation Limit		0.5

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Dirk Peterson

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SUNSET KIA/MITSUBISHI PROJECT
Robinson Noble
Auburn, Washington
Libby Project # L191223-2
Client Project # 3350-001C

QA/QC for Total Mercury by EPA Method 7470

Sample Number	Date Analyzed	Mercury (% Recovery)
LCS	1/3/20	87%
MW6 MS	1/3/20	117%
MW6 MSD	1/3/20	117%
RPD	1/3/20	0%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Dirk Peterson

Libby Environmental, Inc.

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SUNSET KIA/MITSUBISHI PROJECT
Robinson Noble
Libby Project # L191223-2
Date Received 12/23/2019
Time Received 11:15 AM

Received By KD

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody complete?	☑ Yes	☐ No	
2. How was the sample delivered?	☐ Hand Delivered	☑ Picked Up	☐ Shipped

Log In

3. Cooler or Shipping Container is present.	☑ Yes	☐ No	☐ N/A
4. Cooler or Shipping Container is in good condition.	☑ Yes	☐ No	☐ N/A
5. Cooler or Shipping Container has Custody Seals present.	☐ Yes	☑ No	☐ N/A
6. Was an attempt made to cool the samples?	☑ Yes	☐ No	☐ N/A
7. Temperature of cooler (0°C to 8°C recommended)	0.0 °C		
8. Temperature of sample(s) (0°C to 8°C recommended)	3.0 °C		
9. Did all containers arrive in good condition (unbroken)?	☑ Yes	☐ No	
10. Is it clear what analyses were requested?	☑ Yes	☐ No	
11. Did container labels match Chain of Custody?	☑ Yes	☐ No	
12. Are matrices correctly identified on Chain of Custody?	☑ Yes	☐ No	
13. Are correct containers used for the analysis indicated?	☑ Yes	☐ No	
14. Is there sufficient sample volume for indicated analysis?	☑ Yes	☐ No	
15. Were all containers properly preserved per each analysis?	☑ Yes	☐ No	
16. Were VOA vials collected correctly (no headspace)?	☑ Yes	☐ No	☐ N/A
17. Were all holding times able to be met?	☑ Yes	☐ No	

Discrepancies/ Notes

18. Was client notified of all discrepancies?	☐ Yes	☐ No	☑ N/A

Person Notified: _____ Date: _____

By Whom: _____ Via: _____

Regarding: _____

19. Comments. _____

Anatek Labs, Inc.

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Client:	Pioneer Technologies Corporation	Work Order:	MAG0582
Address:	5205 Corporate Center Court-Suite A	Project:	Sunset Auto
	Lacey, WA 98503	Reported:	12/9/2020 13:23
Attn:	Joel Hecker		

Case Narrative

The samples listed below were received for analysis at Anatek Labs, Inc. The analytical report is attached. All test results reported below comply with and meet current TNI standards, other applicable regulatory standards, and the Anatek Labs, Inc. Quality Assurance Manual, unless otherwise noted in the report.

The results in this report relate only to the samples analyzed. All soil and solid results are reported on a dryweight basis unless otherwise noted. An estimation of uncertainty is available upon request.

This report shall not be reproduced, except in full, without the written consent of Anatek Labs, Inc.

For questions about this report, please contact Justin Doty at 208-883-2839.

Laboratory ID	Sample Name
MAG0582-01	S-MW-8-6-8-071420
MAG0582-02	S-MW-9-11-13-071420
MAG0582-03	S-MW-9-11-13-071420-01
MAG0582-04	S-MW-10-6-8-071420
MAG0582-05	S-MW-11-3-5-071420
MAG0582-06	S-MW-11-9-11-071420
MAG0582-07	S-MW-12-18-20-071420
MAG0582-08	S-B30-2-4-071420
MAG0582-09	S-B31-3-5-071420
MAG0582-10	S-B32-3-5-071420
MAG0582-11	S-B33-2-4-071420
MAG0582-12	S-B34-2-4-071420
MAG0582-13	S-B35-2-4-071420
MAG0582-14	S-B36-5-7-071520
MAG0582-15	S-B37-5-7-071520
MAG0582-16	S-B38-4-6-071520
MAG0582-17	S-B39-5-7-071520
MAG0582-18	S-B40-5-7-071520
MAG0582-19	S-B41-3-5-071520
MAG0582-20	S-B43-2-4-071520
MAG0582-21	SD-01-0-0.5-071520
MAG0582-22	GW-B30-071520
MAG0582-23	GW-B37-071520
MAG0582-24	GW-B39-071520
MAG0582-25	GW-B41-071520
MAG0582-26	GW-B43-071520
MAG0582-27	S-B42-4-6-071420
MAG0582-28	S-B44-6-11-071420
MAG0582-29	S-B45-8-10-071420
MAG0582-30	GW-B32-071420
MAG0582-31	GW-B32-071420-01
MAG0582-32	GW-B33-071420
MAG0582-33	GW-B34-071420
MAG0582-34	GW-B35-071420
MAG0582-35	GW-B42-071420

MAG0582-36	GW-B44-071420
MAG0582-37	GW-B45-071420
MAG0582-38	TB-071420
MAG0582-39	TB-071520

QA/QC Summary

QC Parameter		Yes / No (if No, see Comments below)
1. Sample Holding Time Valid?	Yes	
2. Instrument Tunes Valid?		Yes
3. Method Blank(s) Valid?		Yes
4. Internal Standard Response(s) Valid?		Yes
5. Initial Calibration Curve(s) Valid?		Yes
6. Continuing Calibration(s) Valid?		Yes

Comments:

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Analytical Results Report

Sample Location: S-MW-8-6-8-071420
Lab/Sample Number: MAG0582-01 Collect Date: 07/14/20 08:45
Date Received: 07/16/20 14:04 Collected By:
Matrix:

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	74.5	%	0.100	0.100	8/6/20 9:43	JBM	SM 2540 G	
Metals by ICP-MS								
Arsenic	7.70	mg/kg dry	0.0340	0.0679	8/5/20 18:55	MYM	EPA 6020B	
Lead	4.14	mg/kg dry	0.0340	0.679	8/4/20 18:46	MYM	EPA 6020B	
Volatiles								
Gasoline	ND	mg/kg dry	9.20	18.4	7/24/20 11:07	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*88.0%*		*70-130*		*7/24/20 11:07*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00460	0.115	7/24/20 11:07	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0460	0.115	7/24/20 11:07	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-MW-8-6-8-071420
Lab/Sample Number: MAG0582-01 Collect Date: 07/14/20 08:45
Date Received: 07/16/20 14:04 Collected By:
Matrix:

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Chloroform	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Ethylbenzene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Hexachlorobutadiene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Isopropylbenzene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0460	0.115	7/24/20 11:07	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0460	0.115	7/24/20 11:07	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0460	0.115	7/24/20 11:07	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Naphthalene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
n-Butylbenzene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
n-Propylbenzene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.00920	0.0230	7/24/20 11:07	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*117%*		*70-130*		*7/24/20 11:07*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*84.3%*		*70-130*		*7/24/20 11:07*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*101%*		*70-130*		*7/24/20 11:07*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-MW-8-6-8-071420

Lab/Sample Number: MAG0582-01 Collect Date: 07/14/20 08:45

Date Received: 07/16/20 14:04 Collected By:

Matrix:

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								

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Analytical Results Report

(Continued)

Sample Location: S-MW-9-11-13-071420

Lab/Sample Number: MAG0582-02 Collect Date: 07/14/20 10:00

Date Received: 07/16/20 14:04 Collected By:

Matrix:

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	72.5	%	0.100	0.100	8/6/20 9:43	JBM	SM 2540 G	
Metals by ICP-MS								
Arsenic	1.94	mg/kg dry	0.0407	0.0813	8/5/20 19:01	MYM	EPA 6020B	
Lead	1.56	mg/kg dry	0.0407	0.813	8/4/20 18:53	MYM	EPA 6020B	
Volatiles								
Gasoline	ND	mg/kg dry	8.31	16.6	7/24/20 11:37	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*90.0%*		*70-130*		*7/24/20 11:37*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00415	0.104	7/24/20 11:37	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0415	0.104	7/24/20 11:37	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-MW-9-11-13-071420

Lab/Sample Number: MAG0582-02 Collect Date: 07/14/20 10:00

Date Received: 07/16/20 14:04 Collected By:

Matrix:

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Chloroform	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Ethylbenzene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Hexachlorobutadiene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Isopropylbenzene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0415	0.104	7/24/20 11:37	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0415	0.104	7/24/20 11:37	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0415	0.104	7/24/20 11:37	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Naphthalene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
n-Butylbenzene	0.0249	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
n-Propylbenzene	0.0469	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.00831	0.0208	7/24/20 11:37	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*119%*		*70-130*		*7/24/20 11:37*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*86.2%*		*70-130*		*7/24/20 11:37*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*104%*		*70-130*		*7/24/20 11:37*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-MW-9-11-13-071420

Lab/Sample Number: MAG0582-02 Collect Date: 07/14/20 10:00

Date Received: 07/16/20 14:04 Collected By:

Matrix:

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								

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Analytical Results Report

(Continued)

Sample Location: S-MW-9-11-13-071420-01

Lab/Sample Number: MAG0582-03 Collect Date: 07/14/20 10:00

Date Received: 07/16/20 14:04 Collected By:

Matrix:

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	78.4	%	0.100	0.100	8/6/20 9:43	JBM	SM 2540 G	
Metals by ICP-MS								
Arsenic	1.57	mg/kg dry	0.0322	0.0644	8/5/20 19:08	MYM	EPA 6020B	
Lead	1.59	mg/kg dry	0.0322	0.644	8/4/20 18:59	MYM	EPA 6020B	
Volatiles								
Gasoline	ND	mg/kg dry	7.54	15.1	7/24/20 12:06	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*92.0%*		*70-130*		*7/24/20 12:06*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00377	0.0943	7/24/20 12:06	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0377	0.0943	7/24/20 12:06	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-MW-9-11-13-071420-01

Lab/Sample Number: MAG0582-03 Collect Date: 07/14/20 10:00

Date Received: 07/16/20 14:04 Collected By:

Matrix:

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Chloroform	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Ethylbenzene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Hexachlorobutadiene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Isopropylbenzene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0377	0.0943	7/24/20 12:06	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0377	0.0943	7/24/20 12:06	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0377	0.0943	7/24/20 12:06	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Naphthalene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
n-Butylbenzene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
n-Propylbenzene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.00754	0.0189	7/24/20 12:06	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*116%*		*70-130*		*7/24/20 12:06*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*87.2%*		*70-130*		*7/24/20 12:06*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*97.9%*		*70-130*		*7/24/20 12:06*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-MW-9-11-13-071420-01

Lab/Sample Number: MAG0582-03 Collect Date: 07/14/20 10:00

Date Received: 07/16/20 14:04 Collected By:

Matrix:

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								

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Analytical Results Report

(Continued)

Sample Location: S-MW-10-6-8-071420

Lab/Sample Number: MAG0582-04 Collect Date: 07/14/20 11:00

Date Received: 07/16/20 14:04 Collected By:

Matrix:

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	75.5	%	0.100	0.100	8/6/20 9:43	JBM	SM 2540 G	
Metals by ICP-MS								
Arsenic	2.33	mg/kg dry	0.0378	0.0756	8/5/20 19:14	MYM	EPA 6020B	
Lead	2.78	mg/kg dry	0.0378	0.756	8/4/20 19:06	MYM	EPA 6020B	
Volatiles								
Gasoline	ND	mg/kg dry	8.83	17.7	7/24/20 12:36	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*87.6%*		*70-130*		*7/24/20 12:36*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00441	0.110	7/24/20 12:36	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0441	0.110	7/24/20 12:36	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-MW-10-6-8-071420

Lab/Sample Number: MAG0582-04 Collect Date: 07/14/20 11:00

Date Received: 07/16/20 14:04 Collected By:

Matrix:

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Chloroform	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Ethylbenzene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Hexachlorobutadiene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Isopropylbenzene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0441	0.110	7/24/20 12:36	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0441	0.110	7/24/20 12:36	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0441	0.110	7/24/20 12:36	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Naphthalene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
n-Butylbenzene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
n-Propylbenzene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.00883	0.0221	7/24/20 12:36	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*116%*		*70-130*		*7/24/20 12:36*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*84.6%*		*70-130*		*7/24/20 12:36*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*95.6%*		*70-130*		*7/24/20 12:36*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-MW-10-6-8-071420

Lab/Sample Number: MAG0582-04 Collect Date: 07/14/20 11:00

Date Received: 07/16/20 14:04 Collected By:

Matrix:

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								

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Analytical Results Report

(Continued)

Sample Location: S-MW-11-3-5-071420
Lab/Sample Number: MAG0582-05 Collect Date: 07/14/20 12:00
Date Received: 07/16/20 14:04 Collected By:
Matrix:

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	85.1	%	0.100	0.100	8/6/20 9:43	JBM	SM 2540 G	
Metals by ICP-MS								
Arsenic	4.83	mg/kg dry	0.0318	0.0636	8/5/20 19:46	MYM	EPA 6020B	
Lead	11.5	mg/kg dry	0.0318	0.636	8/4/20 19:12	MYM	EPA 6020B	
Volatiles								
Gasoline	3250	mg/kg dry	77.3	155	7/27/20 16:12	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*98.8%*		*70-130*		*7/27/20 16:12*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00773	0.0193	7/24/20 13:06	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	88.6	mg/kg dry	0.773	1.93	7/24/20 13:06	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	9.01	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.0386	0.966	7/24/20 13:06	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.386	0.966	7/24/20 13:06	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-MW-11-3-5-071420

Lab/Sample Number: MAG0582-05 Collect Date: 07/14/20 12:00

Date Received: 07/16/20 14:04 Collected By:

Matrix:

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Chloroform	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Ethylbenzene	24.9	mg/kg dry	0.773	1.93	7/24/20 13:06	TEC	EPA 8260C	
Hexachlorobutadiene	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Isopropylbenzene	3.72	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	98.8	mg/kg dry	0.773	1.93	7/24/20 13:06	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.386	0.966	7/24/20 13:06	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.386	0.966	7/24/20 13:06	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.386	0.966	7/24/20 13:06	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Naphthalene	36.4	mg/kg dry	0.773	1.93	7/24/20 13:06	TEC	EPA 8260C	
n-Butylbenzene	5.59	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
n-Propylbenzene	11.5	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
o-Xylene (MCL for total)	24.0	mg/kg dry	0.773	1.93	7/24/20 13:06	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
sec-Butylbenzene	1.29	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.0773	0.193	7/24/20 13:06	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*97.4%*		*70-130*		*7/24/20 13:06*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*97.6%*		*70-130*		*7/24/20 13:06*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*110%*		*70-130*		*7/24/20 13:06*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-MW-11-3-5-071420

Lab/Sample Number: MAG0582-05 Collect Date: 07/14/20 12:00

Date Received: 07/16/20 14:04 Collected By:

Matrix:

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								

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Analytical Results Report

(Continued)

Sample Location: S-MW-11-9-11-071420

Lab/Sample Number: MAG0582-06 Collect Date: 07/14/20 12:05

Date Received: 07/16/20 14:04 Collected By:

Matrix:

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	84.9	%	0.100	0.100	8/6/20 9:43	JBM	SM 2540 G	
Metals by ICP-MS								
Arsenic	4.52	mg/kg dry	0.0335	0.0670	8/5/20 19:53	MYM	EPA 6020B	
Lead	6.17	mg/kg dry	0.0335	0.670	8/4/20 19:18	MYM	EPA 6020B	
Volatiles								
Gasoline	1860	mg/kg dry	74.6	149	7/27/20 18:16	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*104%*			*70-130*	*7/27/20 18:16*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	28.8	mg/kg dry	0.746	1.86	7/27/20 18:16	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	6.79	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.0373	0.932	7/27/20 18:16	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.373	0.932	7/27/20 18:16	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-MW-11-9-11-071420

Lab/Sample Number: MAG0582-06 Collect Date: 07/14/20 12:05

Date Received: 07/16/20 14:04 Collected By:

Matrix:

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Chloroform	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Ethylbenzene	9.31	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Hexachlorobutadiene	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Isopropylbenzene	3.33	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	27.3	mg/kg dry	0.746	1.86	7/27/20 18:16	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.373	0.932	7/27/20 18:16	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.373	0.932	7/27/20 18:16	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.373	0.932	7/27/20 18:16	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Naphthalene	24.9	mg/kg dry	0.746	1.86	7/27/20 18:16	TEC	EPA 8260C	
n-Butylbenzene	5.22	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
n-Propylbenzene	10.6	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
o-Xylene (MCL for total)	4.85	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
sec-Butylbenzene	1.89	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.0746	0.186	7/27/20 18:16	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*110%*		*70-130*		*7/27/20 18:16*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*96.7%*		*70-130*		*7/27/20 18:16*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*102%*		*70-130*		*7/27/20 18:16*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-MW-11-9-11-071420

Lab/Sample Number: MAG0582-06 Collect Date: 07/14/20 12:05

Date Received: 07/16/20 14:04 Collected By:

Matrix:

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								

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Analytical Results Report

(Continued)

Sample Location: S-MW-12-18-20-071420

Lab/Sample Number: MAG0582-07 Collect Date: 07/14/20 13:30

Date Received: 07/16/20 14:04 Collected By:

Matrix:

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	84.9	%	0.100	0.100	8/6/20 9:43	JBM	SM 2540 G	
Metals by ICP-MS								
Arsenic	1.74	mg/kg dry	0.0316	0.0632	8/5/20 19:59	MYM	EPA 6020B	
Lead	1.24	mg/kg dry	0.0316	0.632	8/4/20 19:25	MYM	EPA 6020B	
Volatiles								
Gasoline	ND	mg/kg dry	7.70	15.4	7/27/20 12:08	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*92.0%*		*70-130*		*7/27/20 12:08*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00385	0.0963	7/27/20 12:08	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0385	0.0963	7/27/20 12:08	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-MW-12-18-20-071420

Lab/Sample Number: MAG0582-07 Collect Date: 07/14/20 13:30

Date Received: 07/16/20 14:04 Collected By:

Matrix:

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Chloroform	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Ethylbenzene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Hexachlorobutadiene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Isopropylbenzene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0385	0.0963	7/27/20 12:08	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0385	0.0963	7/27/20 12:08	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0385	0.0963	7/27/20 12:08	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Naphthalene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
n-Butylbenzene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
n-Propylbenzene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.00770	0.0193	7/27/20 12:08	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*115%*		*70-130*		*7/27/20 12:08*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*85.2%*		*70-130*		*7/27/20 12:08*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*104%*		*70-130*		*7/27/20 12:08*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-MW-12-18-20-071420

Lab/Sample Number: MAG0582-07 Collect Date: 07/14/20 13:30

Date Received: 07/16/20 14:04 Collected By:

Matrix:

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								

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Analytical Results Report

(Continued)

Sample Location: S-B30-2-4-071420
Lab/Sample Number: MAG0582-08 Collect Date: 07/14/20 15:10
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	81.7	%	0.100	0.100	7/24/20 9:09	BMM	SM 2540 G	
Metals by ICP-MS								
Silver	ND	mg/kg dry	0.00378	0.663	8/4/20 19:31	MYM	EPA 6020B	
Arsenic	4.82	mg/kg dry	0.0331	0.0663	8/5/20 20:05	MYM	EPA 6020B	
Barium	62.8	mg/kg dry	0.00663	0.663	8/4/20 19:31	MYM	EPA 6020B	
Cadmium	ND	mg/kg dry	0.00663	0.663	8/4/20 19:31	MYM	EPA 6020B	
Chromium	18.0	mg/kg dry	0.00331	0.663	8/4/20 19:31	MYM	EPA 6020B	
Mercury	ND	mg/kg dry	0.000663	0.0663	8/4/20 19:31	MYM	EPA 6020B	
Lead	7.61	mg/kg dry	0.0331	0.663	8/4/20 19:31	MYM	EPA 6020B	
Selenium	ND	mg/kg dry	0.00391	0.663	8/6/20 21:02	MYM	EPA 6020B	
Semivolatiles								
1-Methylnaphthalene	0.0295	mg/kg dry	0.00617	0.0123	7/31/20 18:36	TGT	EPA 8270D	
2-Methylnaphthalene	0.0128	mg/kg dry	0.00617	0.0123	7/31/20 18:36	TGT	EPA 8270D	
Acenaphthene	ND	mg/kg dry	0.00617	0.0123	7/31/20 18:36	TGT	EPA 8270D	
Acenaphthylene	ND	mg/kg dry	0.00617	0.0123	7/31/20 18:36	TGT	EPA 8270D	
Anthracene	ND	mg/kg dry	0.00617	0.0123	7/31/20 18:36	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	mg/kg dry	0.00617	0.0123	7/31/20 18:36	TGT	EPA 8270D	
Benzo[a]anthracene	ND	mg/kg dry	0.00617	0.0123	7/31/20 18:36	TGT	EPA 8270D	
Benzo[a]pyrene	ND	mg/kg dry	0.00617	0.0123	7/31/20 18:36	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	mg/kg dry	0.00617	0.0123	7/31/20 18:36	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	mg/kg dry	0.00617	0.0123	7/31/20 18:36	TGT	EPA 8270D	
Chrysene	ND	mg/kg dry	0.00617	0.0123	7/31/20 18:36	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	mg/kg dry	0.00617	0.0123	7/31/20 18:36	TGT	EPA 8270D	
Fluoranthene	0.0508	mg/kg dry	0.00617	0.0123	7/31/20 18:36	TGT	EPA 8270D	
Fluorene	ND	mg/kg dry	0.00617	0.0123	7/31/20 18:36	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	mg/kg dry	0.00617	0.0123	7/31/20 18:36	TGT	EPA 8270D	
Naphthalene	ND	mg/kg dry	0.00617	0.0123	7/31/20 18:36	TGT	EPA 8270D	
Phenanthrene	ND	mg/kg dry	0.00617	0.0123	7/31/20 18:36	TGT	EPA 8270D	
Pyrene	ND	mg/kg dry	0.00617	0.0123	7/31/20 18:36	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*86.8%*		*60-130*		*7/31/20 18:36*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/kg dry	26.7	66.8	7/29/20 1:56	taz	NWTPH-Dx	
Lube Oil	ND	mg/kg dry	134	267	7/29/20 1:56	taz	NWTPH-Dx	
Surrogate: Hexacosane	*97.5%*		*50-150*		*7/29/20 1:56*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/kg dry	8.16	16.3	7/24/20 15:05	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*97.6%*		*70-130*		*7/24/20 15:05*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: S-B30-2-4-071420
Lab/Sample Number: MAG0582-08 Collect Date: 07/14/20 15:10
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	0.0278	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00408	0.102	7/24/20 15:05	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0408	0.102	7/24/20 15:05	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Chloroform	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Ethylbenzene	0.0233	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-B30-2-4-071420

Lab/Sample Number: MAG0582-08 Collect Date: 07/14/20 15:10

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Isopropylbenzene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	0.0490	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0408	0.102	7/24/20 15:05	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0408	0.102	7/24/20 15:05	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0408	0.102	7/24/20 15:05	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Naphthalene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
n-Butylbenzene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
n-Propylbenzene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.00816	0.0204	7/24/20 15:05	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*112%*		*70-130*		*7/24/20 15:05*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*90.2%*		*70-130*		*7/24/20 15:05*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*95.0%*		*70-130*		*7/24/20 15:05*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-B31-3-5-071420
Lab/Sample Number: MAG0582-09 Collect Date: 07/14/20 12:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	89.6	%	0.100	0.100	7/24/20 9:09	BMM	SM 2540 G	
Metals by ICP-MS								
Silver	ND	mg/kg dry	0.00349	0.613	8/4/20 19:38	MYM	EPA 6020B	
Arsenic	3.59	mg/kg dry	0.0306	0.0613	8/5/20 20:12	MYM	EPA 6020B	
Barium	48.4	mg/kg dry	0.00613	0.613	8/4/20 19:38	MYM	EPA 6020B	
Cadmium	ND	mg/kg dry	0.00613	0.613	8/4/20 19:38	MYM	EPA 6020B	
Chromium	31.4	mg/kg dry	0.00306	0.613	8/4/20 19:38	MYM	EPA 6020B	
Mercury	ND	mg/kg dry	0.000613	0.0613	8/4/20 19:38	MYM	EPA 6020B	
Lead	2.81	mg/kg dry	0.0306	0.613	8/4/20 19:38	MYM	EPA 6020B	
Selenium	ND	mg/kg dry	0.00362	0.613	8/6/20 21:34	MYM	EPA 6020B	
Semivolatiles								
1-Methylnaphthalene	ND	mg/kg dry	0.00548	0.0110	7/31/20 16:36	TGT	EPA 8270D	
2-Methylnaphthalene	ND	mg/kg dry	0.00548	0.0110	7/31/20 16:36	TGT	EPA 8270D	
Acenaphthene	ND	mg/kg dry	0.00548	0.0110	7/31/20 16:36	TGT	EPA 8270D	
Acenaphthylene	ND	mg/kg dry	0.00548	0.0110	7/31/20 16:36	TGT	EPA 8270D	
Anthracene	ND	mg/kg dry	0.00548	0.0110	7/31/20 16:36	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	mg/kg dry	0.00548	0.0110	7/31/20 16:36	TGT	EPA 8270D	
Benzo[a]anthracene	ND	mg/kg dry	0.00548	0.0110	7/31/20 16:36	TGT	EPA 8270D	
Benzo[a]pyrene	ND	mg/kg dry	0.00548	0.0110	7/31/20 16:36	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	mg/kg dry	0.00548	0.0110	7/31/20 16:36	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	mg/kg dry	0.00548	0.0110	7/31/20 16:36	TGT	EPA 8270D	
Chrysene	ND	mg/kg dry	0.00548	0.0110	7/31/20 16:36	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	mg/kg dry	0.00548	0.0110	7/31/20 16:36	TGT	EPA 8270D	
Fluoranthene	ND	mg/kg dry	0.00548	0.0110	7/31/20 16:36	TGT	EPA 8270D	
Fluorene	ND	mg/kg dry	0.00548	0.0110	7/31/20 16:36	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	mg/kg dry	0.00548	0.0110	7/31/20 16:36	TGT	EPA 8270D	
Naphthalene	ND	mg/kg dry	0.00548	0.0110	7/31/20 16:36	TGT	EPA 8270D	
Phenanthrene	ND	mg/kg dry	0.00548	0.0110	7/31/20 16:36	TGT	EPA 8270D	
Pyrene	ND	mg/kg dry	0.00548	0.0110	7/31/20 16:36	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*95.6%*		*60-130*		*7/31/20 16:36*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/kg dry	11.3	28.3	7/29/20 3:40	taz	NWTPH-Dx	
Lube Oil	ND	mg/kg dry	56.7	113	7/29/20 3:40	taz	NWTPH-Dx	
Surrogate: Hexacosane	*92.3%*		*50-150*		*7/29/20 3:40*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/kg dry	6.93	13.9	7/24/20 15:35	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*93.6%*		*70-130*		*7/24/20 15:35*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: S-B31-3-5-071420
Lab/Sample Number: MAG0582-09 Collect Date: 07/14/20 12:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00346	0.0866	7/24/20 15:35	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0346	0.0866	7/24/20 15:35	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Chloroform	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Ethylbenzene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-B31-3-5-071420
Lab/Sample Number: MAG0582-09 Collect Date: 07/14/20 12:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Isopropylbenzene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0346	0.0866	7/24/20 15:35	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0346	0.0866	7/24/20 15:35	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0346	0.0866	7/24/20 15:35	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Naphthalene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
n-Butylbenzene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
n-Propylbenzene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.00693	0.0173	7/24/20 15:35	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*113%*		*70-130*		*7/24/20 15:35*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*85.5%*		*70-130*		*7/24/20 15:35*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*93.3%*		*70-130*		*7/24/20 15:35*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-B32-3-5-071420

Lab/Sample Number: MAG0582-10 Collect Date: 07/14/20 14:00

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	85.0	%	0.100	0.100	7/24/20 9:09	BMM	SM 2540 G	
Metals by ICP-MS								
Silver	ND	mg/kg dry	0.00341	0.598	8/4/20 20:10	MYM	EPA 6020B	
Arsenic	3.26	mg/kg dry	0.0299	0.0598	8/5/20 20:18	MYM	EPA 6020B	
Barium	46.8	mg/kg dry	0.00598	0.598	8/4/20 20:10	MYM	EPA 6020B	
Cadmium	ND	mg/kg dry	0.00598	0.598	8/4/20 20:10	MYM	EPA 6020B	
Chromium	25.9	mg/kg dry	0.00299	0.598	8/4/20 20:10	MYM	EPA 6020B	
Mercury	ND	mg/kg dry	0.000598	0.0598	8/4/20 20:10	MYM	EPA 6020B	
Lead	2.79	mg/kg dry	0.0299	0.598	8/4/20 20:10	MYM	EPA 6020B	
Selenium	ND	mg/kg dry	0.00353	0.598	8/6/20 21:41	MYM	EPA 6020B	
Semivolatiles								
1-Methylnaphthalene	ND	mg/kg dry	0.0593	0.119	7/31/20 19:48	TGT	EPA 8270D	
2-Methylnaphthalene	ND	mg/kg dry	0.0593	0.119	7/31/20 19:48	TGT	EPA 8270D	
Acenaphthene	ND	mg/kg dry	0.0593	0.119	7/31/20 19:48	TGT	EPA 8270D	
Acenaphthylene	ND	mg/kg dry	0.0593	0.119	7/31/20 19:48	TGT	EPA 8270D	
Anthracene	ND	mg/kg dry	0.0593	0.119	7/31/20 19:48	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	mg/kg dry	0.0593	0.119	7/31/20 19:48	TGT	EPA 8270D	
Benzo[a]anthracene	ND	mg/kg dry	0.0593	0.119	7/31/20 19:48	TGT	EPA 8270D	
Benzo[a]pyrene	ND	mg/kg dry	0.0593	0.119	7/31/20 19:48	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	mg/kg dry	0.0593	0.119	7/31/20 19:48	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	mg/kg dry	0.0593	0.119	7/31/20 19:48	TGT	EPA 8270D	
Chrysene	ND	mg/kg dry	0.0593	0.119	7/31/20 19:48	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	mg/kg dry	0.0593	0.119	7/31/20 19:48	TGT	EPA 8270D	
Fluoranthene	ND	mg/kg dry	0.0593	0.119	7/31/20 19:48	TGT	EPA 8270D	
Fluorene	ND	mg/kg dry	0.0593	0.119	7/31/20 19:48	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	mg/kg dry	0.0593	0.119	7/31/20 19:48	TGT	EPA 8270D	
Naphthalene	ND	mg/kg dry	0.0593	0.119	7/31/20 19:48	TGT	EPA 8270D	
Phenanthrene	ND	mg/kg dry	0.0593	0.119	7/31/20 19:48	TGT	EPA 8270D	
Pyrene	ND	mg/kg dry	0.0593	0.119	7/31/20 19:48	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*91.3%*		*60-130*		*7/31/20 19:48*	*TGT*	*EPA 8270D*	
Diesel	2180	mg/kg dry	370	739	7/30/20 13:56	taz	NWTPH-Dx	
Lube Oil	13200	mg/kg dry	739	1480	7/30/20 13:56	taz	NWTPH-Dx	
Surrogate: Hexacosane	*96.6%*		*50-150*		*7/30/20 13:56*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/kg dry	7.80	15.6	7/24/20 16:05	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*95.6%*		*70-130*		*7/24/20 16:05*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: S-B32-3-5-071420
Lab/Sample Number: MAG0582-10 Collect Date: 07/14/20 14:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00390	0.0974	7/24/20 16:05	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0390	0.0974	7/24/20 16:05	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Chloroform	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Ethylbenzene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-B32-3-5-071420

Lab/Sample Number: MAG0582-10 Collect Date: 07/14/20 14:00

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Isopropylbenzene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0390	0.0974	7/24/20 16:05	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0390	0.0974	7/24/20 16:05	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0390	0.0974	7/24/20 16:05	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Naphthalene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
n-Butylbenzene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
n-Propylbenzene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.00780	0.0195	7/24/20 16:05	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*108%*		*70-130*		*7/24/20 16:05*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*88.8%*		*70-130*		*7/24/20 16:05*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*100%*		*70-130*		*7/24/20 16:05*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-B33-2-4-071420
Lab/Sample Number: MAG0582-11 Collect Date: 07/14/20 12:40
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	86.1	%	0.100	0.100	7/24/20 9:09	BMM	SM 2540 G	
Metals by ICP-MS								
Silver	ND	mg/kg dry	0.00341	0.598	8/4/20 20:16	MYM	EPA 6020B	
Arsenic	4.55	mg/kg dry	0.0299	0.0598	8/5/20 20:25	MYM	EPA 6020B	
Barium	54.1	mg/kg dry	0.00598	0.598	8/4/20 20:16	MYM	EPA 6020B	
Cadmium	ND	mg/kg dry	0.00598	0.598	8/4/20 20:16	MYM	EPA 6020B	
Chromium	21.6	mg/kg dry	0.00299	0.598	8/4/20 20:16	MYM	EPA 6020B	
Mercury	0.394	mg/kg dry	0.000598	0.0598	8/4/20 20:16	MYM	EPA 6020B	
Lead	4.55	mg/kg dry	0.0299	0.598	8/4/20 20:16	MYM	EPA 6020B	
Selenium	ND	mg/kg dry	0.00353	0.598	8/6/20 21:47	MYM	EPA 6020B	
Semivolatiles								
1-Methylnaphthalene	ND	mg/kg dry	0.00578	0.0116	7/31/20 17:00	TGT	EPA 8270D	
2-Methylnaphthalene	ND	mg/kg dry	0.00578	0.0116	7/31/20 17:00	TGT	EPA 8270D	
Acenaphthene	ND	mg/kg dry	0.00578	0.0116	7/31/20 17:00	TGT	EPA 8270D	
Acenaphthylene	ND	mg/kg dry	0.00578	0.0116	7/31/20 17:00	TGT	EPA 8270D	
Anthracene	ND	mg/kg dry	0.00578	0.0116	7/31/20 17:00	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	mg/kg dry	0.00578	0.0116	7/31/20 17:00	TGT	EPA 8270D	
Benzo[a]anthracene	ND	mg/kg dry	0.00578	0.0116	7/31/20 17:00	TGT	EPA 8270D	
Benzo[a]pyrene	ND	mg/kg dry	0.00578	0.0116	7/31/20 17:00	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	mg/kg dry	0.00578	0.0116	7/31/20 17:00	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	mg/kg dry	0.00578	0.0116	7/31/20 17:00	TGT	EPA 8270D	
Chrysene	ND	mg/kg dry	0.00578	0.0116	7/31/20 17:00	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	mg/kg dry	0.00578	0.0116	7/31/20 17:00	TGT	EPA 8270D	
Fluoranthene	ND	mg/kg dry	0.00578	0.0116	7/31/20 17:00	TGT	EPA 8270D	
Fluorene	ND	mg/kg dry	0.00578	0.0116	7/31/20 17:00	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	mg/kg dry	0.00578	0.0116	7/31/20 17:00	TGT	EPA 8270D	
Naphthalene	ND	mg/kg dry	0.00578	0.0116	7/31/20 17:00	TGT	EPA 8270D	
Phenanthrene	ND	mg/kg dry	0.00578	0.0116	7/31/20 17:00	TGT	EPA 8270D	
Pyrene	ND	mg/kg dry	0.00578	0.0116	7/31/20 17:00	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*97.0%*		*60-130*		*7/31/20 17:00*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/kg dry	30.1	75.2	7/29/20 4:49	taz	NWTPH-Dx	
Lube Oil	ND	mg/kg dry	150	301	7/29/20 4:49	taz	NWTPH-Dx	
Surrogate: Hexacosane	*88.4%*		*50-150*		*7/29/20 4:49*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/kg dry	7.74	15.5	7/24/20 16:35	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*92.4%*		*70-130*		*7/24/20 16:35*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: S-B33-2-4-071420
Lab/Sample Number: MAG0582-11 Collect Date: 07/14/20 12:40
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00387	0.0968	7/24/20 16:35	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0387	0.0968	7/24/20 16:35	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Chloroform	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Ethylbenzene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-B33-2-4-071420
Lab/Sample Number: MAG0582-11 Collect Date: 07/14/20 12:40
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Isopropylbenzene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0387	0.0968	7/24/20 16:35	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0387	0.0968	7/24/20 16:35	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0387	0.0968	7/24/20 16:35	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Naphthalene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
n-Butylbenzene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
n-Propylbenzene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.00774	0.0194	7/24/20 16:35	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*110%*		*70-130*		*7/24/20 16:35*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*86.0%*		*70-130*		*7/24/20 16:35*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*101%*		*70-130*		*7/24/20 16:35*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-B34-2-4-071420
Lab/Sample Number: MAG0582-12 Collect Date: 07/14/20 08:45
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	93.6	%	0.100	0.100	7/24/20 9:09	BMM	SM 2540 G	
Semivolatiles								
1-Methylnaphthalene	ND	mg/kg dry	0.00537	0.0107	7/31/20 18:12	TGT	EPA 8270D	
2-Methylnaphthalene	ND	mg/kg dry	0.00537	0.0107	7/31/20 18:12	TGT	EPA 8270D	
Acenaphthene	ND	mg/kg dry	0.00537	0.0107	7/31/20 18:12	TGT	EPA 8270D	
Acenaphthylene	ND	mg/kg dry	0.00537	0.0107	7/31/20 18:12	TGT	EPA 8270D	
Anthracene	ND	mg/kg dry	0.00537	0.0107	7/31/20 18:12	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	mg/kg dry	0.00537	0.0107	7/31/20 18:12	TGT	EPA 8270D	
Benzo[a]anthracene	ND	mg/kg dry	0.00537	0.0107	7/31/20 18:12	TGT	EPA 8270D	
Benzo[a]pyrene	ND	mg/kg dry	0.00537	0.0107	7/31/20 18:12	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	mg/kg dry	0.00537	0.0107	7/31/20 18:12	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	mg/kg dry	0.00537	0.0107	7/31/20 18:12	TGT	EPA 8270D	
Chrysene	ND	mg/kg dry	0.00537	0.0107	7/31/20 18:12	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	mg/kg dry	0.00537	0.0107	7/31/20 18:12	TGT	EPA 8270D	
Fluoranthene	ND	mg/kg dry	0.00537	0.0107	7/31/20 18:12	TGT	EPA 8270D	
Fluorene	ND	mg/kg dry	0.00537	0.0107	7/31/20 18:12	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	mg/kg dry	0.00537	0.0107	7/31/20 18:12	TGT	EPA 8270D	
Naphthalene	ND	mg/kg dry	0.00537	0.0107	7/31/20 18:12	TGT	EPA 8270D	
Phenanthrene	ND	mg/kg dry	0.00537	0.0107	7/31/20 18:12	TGT	EPA 8270D	
Pyrene	ND	mg/kg dry	0.00537	0.0107	7/31/20 18:12	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*93.2%*		*60-130*		*7/31/20 18:12*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/kg dry	11.4	28.6	7/29/20 5:23	taz	NWTPH-Dx	
Lube Oil	ND	mg/kg dry	57.2	114	7/29/20 5:23	taz	NWTPH-Dx	
Surrogate: Hexacosane	*99.5%*		*50-150*		*7/29/20 5:23*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/kg dry	6.80	13.6	7/24/20 17:05	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*94.4%*		*70-130*		*7/24/20 17:05*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-B34-2-4-071420
Lab/Sample Number: MAG0582-12 Collect Date: 07/14/20 08:45
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,2,4-Trimethylbenzene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00340	0.0850	7/24/20 17:05	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0340	0.0850	7/24/20 17:05	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Chloroform	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Ethylbenzene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Hexachlorobutadiene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Isopropylbenzene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0340	0.0850	7/24/20 17:05	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0340	0.0850	7/24/20 17:05	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0340	0.0850	7/24/20 17:05	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Naphthalene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-B34-2-4-071420

Lab/Sample Number: MAG0582-12 Collect Date: 07/14/20 08:45

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
n-Butylbenzene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
n-Propylbenzene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.00680	0.0170	7/24/20 17:05	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*114%*		*70-130*		*7/24/20 17:05*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*86.6%*		*70-130*		*7/24/20 17:05*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*92.4%*		*70-130*		*7/24/20 17:05*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-B35-2-4-071420

Lab/Sample Number: MAG0582-13 Collect Date: 07/14/20 09:10

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	87.1	%	0.100	0.100	7/24/20 9:09	BMM	SM 2540 G	
Metals by ICP-MS								
Silver	ND	mg/kg dry	0.00408	0.716	8/4/20 20:29	MYM	EPA 6020B	
Arsenic	7.12	mg/kg dry	0.0358	0.0716	8/5/20 20:37	MYM	EPA 6020B	
Barium	77.8	mg/kg dry	0.00716	0.716	8/4/20 20:29	MYM	EPA 6020B	
Cadmium	ND	mg/kg dry	0.00716	0.716	8/4/20 20:29	MYM	EPA 6020B	
Chromium	24.4	mg/kg dry	0.00358	0.716	8/4/20 20:29	MYM	EPA 6020B	
Mercury	0.0730	mg/kg dry	0.000716	0.0716	8/4/20 20:29	MYM	EPA 6020B	
Lead	10.5	mg/kg dry	0.0358	0.716	8/4/20 20:29	MYM	EPA 6020B	
Selenium	ND	mg/kg dry	0.00423	0.716	8/6/20 21:53	MYM	EPA 6020B	
Semivolatiles								
1-Methylnaphthalene	0.0571	mg/kg dry	0.00574	0.0115	7/31/20 19:00	TGT	EPA 8270D	
2-Methylnaphthalene	0.0598	mg/kg dry	0.00574	0.0115	7/31/20 19:00	TGT	EPA 8270D	
Acenaphthene	0.0124	mg/kg dry	0.00574	0.0115	7/31/20 19:00	TGT	EPA 8270D	
Acenaphthylene	ND	mg/kg dry	0.00574	0.0115	7/31/20 19:00	TGT	EPA 8270D	
Anthracene	ND	mg/kg dry	0.00574	0.0115	7/31/20 19:00	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	mg/kg dry	0.00574	0.0115	7/31/20 19:00	TGT	EPA 8270D	
Benzo[a]anthracene	ND	mg/kg dry	0.00574	0.0115	7/31/20 19:00	TGT	EPA 8270D	
Benzo[a]pyrene	ND	mg/kg dry	0.00574	0.0115	7/31/20 19:00	TGT	EPA 8270D	
Benzo[b]fluoranthene	0.0161	mg/kg dry	0.00574	0.0115	7/31/20 19:00	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	mg/kg dry	0.00574	0.0115	7/31/20 19:00	TGT	EPA 8270D	
Chrysene	ND	mg/kg dry	0.00574	0.0115	7/31/20 19:00	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	mg/kg dry	0.00574	0.0115	7/31/20 19:00	TGT	EPA 8270D	
Fluoranthene	0.0725	mg/kg dry	0.00574	0.0115	7/31/20 19:00	TGT	EPA 8270D	
Fluorene	ND	mg/kg dry	0.00574	0.0115	7/31/20 19:00	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	mg/kg dry	0.00574	0.0115	7/31/20 19:00	TGT	EPA 8270D	
Naphthalene	0.119	mg/kg dry	0.00574	0.0115	7/31/20 19:00	TGT	EPA 8270D	
Phenanthrene	ND	mg/kg dry	0.00574	0.0115	7/31/20 19:00	TGT	EPA 8270D	
Pyrene	0.0292	mg/kg dry	0.00574	0.0115	7/31/20 19:00	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*95.9%*		*60-130*		*7/31/20 19:00*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/kg dry	27.6	69.0	7/29/20 5:58	taz	NWTPH-Dx	
Lube Oil	ND	mg/kg dry	138	276	7/29/20 5:58	taz	NWTPH-Dx	
Surrogate: Hexacosane	*93.2%*		*50-150*		*7/29/20 5:58*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/kg dry	7.56	15.1	7/24/20 17:34	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*92.0%*		*70-130*		*7/24/20 17:34*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: S-B35-2-4-071420
Lab/Sample Number: MAG0582-13 Collect Date: 07/14/20 09:10
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00378	0.0945	7/24/20 17:34	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0378	0.0945	7/24/20 17:34	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Chloroform	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Ethylbenzene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-B35-2-4-071420
Lab/Sample Number: MAG0582-13 Collect Date: 07/14/20 09:10
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Isopropylbenzene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0378	0.0945	7/24/20 17:34	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0378	0.0945	7/24/20 17:34	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0378	0.0945	7/24/20 17:34	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Naphthalene	0.182	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
n-Butylbenzene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
n-Propylbenzene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.00756	0.0189	7/24/20 17:34	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*113%*		*70-130*		*7/24/20 17:34*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*84.7%*		*70-130*		*7/24/20 17:34*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*98.4%*		*70-130*		*7/24/20 17:34*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-B36-5-7-071520

Lab/Sample Number: MAG0582-14 Collect Date: 07/15/20 11:30

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	70.0	%	0.100	0.100	7/24/20 9:09	BMM	SM 2540 G	
Metals by ICP-MS								
Silver	ND	mg/kg dry	0.00478	0.838	8/4/20 20:35	MYM	EPA 6020B	
Arsenic	6.61	mg/kg dry	0.0419	0.0838	8/5/20 20:44	MYM	EPA 6020B	
Barium	112	mg/kg dry	0.00838	0.838	8/4/20 20:35	MYM	EPA 6020B	
Cadmium	ND	mg/kg dry	0.00838	0.838	8/4/20 20:35	MYM	EPA 6020B	
Chromium	25.4	mg/kg dry	0.00419	0.838	8/4/20 20:35	MYM	EPA 6020B	
Mercury	ND	mg/kg dry	0.000838	0.0838	8/4/20 20:35	MYM	EPA 6020B	
Lead	6.34	mg/kg dry	0.0419	0.838	8/4/20 20:35	MYM	EPA 6020B	
Selenium	ND	mg/kg dry	0.00494	0.838	8/6/20 22:00	MYM	EPA 6020B	
Semivolatiles								
1-Methylnaphthalene	ND	mg/kg dry	0.00703	0.0141	7/31/20 17:24	TGT	EPA 8270D	
2-Methylnaphthalene	ND	mg/kg dry	0.00703	0.0141	7/31/20 17:24	TGT	EPA 8270D	
Acenaphthene	ND	mg/kg dry	0.00703	0.0141	7/31/20 17:24	TGT	EPA 8270D	
Acenaphthylene	ND	mg/kg dry	0.00703	0.0141	7/31/20 17:24	TGT	EPA 8270D	
Anthracene	ND	mg/kg dry	0.00703	0.0141	7/31/20 17:24	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	mg/kg dry	0.00703	0.0141	7/31/20 17:24	TGT	EPA 8270D	
Benzo[a]anthracene	ND	mg/kg dry	0.00703	0.0141	7/31/20 17:24	TGT	EPA 8270D	
Benzo[a]pyrene	ND	mg/kg dry	0.00703	0.0141	7/31/20 17:24	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	mg/kg dry	0.00703	0.0141	7/31/20 17:24	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	mg/kg dry	0.00703	0.0141	7/31/20 17:24	TGT	EPA 8270D	
Chrysene	ND	mg/kg dry	0.00703	0.0141	7/31/20 17:24	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	mg/kg dry	0.00703	0.0141	7/31/20 17:24	TGT	EPA 8270D	
Fluoranthene	ND	mg/kg dry	0.00703	0.0141	7/31/20 17:24	TGT	EPA 8270D	
Fluorene	ND	mg/kg dry	0.00703	0.0141	7/31/20 17:24	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	mg/kg dry	0.00703	0.0141	7/31/20 17:24	TGT	EPA 8270D	
Naphthalene	ND	mg/kg dry	0.00703	0.0141	7/31/20 17:24	TGT	EPA 8270D	
Phenanthrene	ND	mg/kg dry	0.00703	0.0141	7/31/20 17:24	TGT	EPA 8270D	
Pyrene	ND	mg/kg dry	0.00703	0.0141	7/31/20 17:24	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*88.6%*		*60-130*		*7/31/20 17:24*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/kg dry	14.0	35.1	7/29/20 6:33	taz	NWTPH-Dx	
Lube Oil	ND	mg/kg dry	70.1	140	7/29/20 6:33	taz	NWTPH-Dx	
Surrogate: Hexacosane	*92.1%*		*50-150*		*7/29/20 6:33*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/kg dry	9.58	19.2	7/27/20 12:38	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*94.0%*		*70-130*		*7/27/20 12:38*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: S-B36-5-7-071520
Lab/Sample Number: MAG0582-14 Collect Date: 07/15/20 11:30
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00479	0.120	7/27/20 12:38	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0479	0.120	7/27/20 12:38	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Chloroform	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Ethylbenzene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-B36-5-7-071520

Lab/Sample Number: MAG0582-14 Collect Date: 07/15/20 11:30

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Isopropylbenzene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0479	0.120	7/27/20 12:38	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0479	0.120	7/27/20 12:38	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0479	0.120	7/27/20 12:38	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Naphthalene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
n-Butylbenzene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
n-Propylbenzene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.00958	0.0240	7/27/20 12:38	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*116%*		*70-130*		*7/27/20 12:38*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*88.0%*		*70-130*		*7/27/20 12:38*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*92.2%*		*70-130*		*7/27/20 12:38*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-B37-5-7-071520

Lab/Sample Number: MAG0582-15 Collect Date: 07/14/20 11:00 - 07/15/20 11:00

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	70.5	%	0.100	0.100	7/24/20 9:09	BMM	SM 2540 G	
Metals by ICP-MS								
Silver	ND	mg/kg dry	0.00480	0.843	8/4/20 20:42	MYM	EPA 6020B	
Arsenic	7.91	mg/kg dry	0.0421	0.0843	8/5/20 21:16	MYM	EPA 6020B	
Barium	88.9	mg/kg dry	0.00843	0.843	8/4/20 20:42	MYM	EPA 6020B	
Cadmium	ND	mg/kg dry	0.00843	0.843	8/4/20 20:42	MYM	EPA 6020B	
Chromium	24.3	mg/kg dry	0.00421	0.843	8/4/20 20:42	MYM	EPA 6020B	
Mercury	ND	mg/kg dry	0.000843	0.0843	8/4/20 20:42	MYM	EPA 6020B	
Lead	5.12	mg/kg dry	0.0421	0.843	8/4/20 20:42	MYM	EPA 6020B	
Selenium	ND	mg/kg dry	0.00497	0.843	8/6/20 22:06	MYM	EPA 6020B	
Semivolatiles								
1-Methylnaphthalene	ND	mg/kg dry	0.00712	0.0142	7/31/20 17:48	TGT	EPA 8270D	
2-Methylnaphthalene	ND	mg/kg dry	0.00712	0.0142	7/31/20 17:48	TGT	EPA 8270D	
Acenaphthene	ND	mg/kg dry	0.00712	0.0142	7/31/20 17:48	TGT	EPA 8270D	
Acenaphthylene	ND	mg/kg dry	0.00712	0.0142	7/31/20 17:48	TGT	EPA 8270D	
Anthracene	ND	mg/kg dry	0.00712	0.0142	7/31/20 17:48	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	mg/kg dry	0.00712	0.0142	7/31/20 17:48	TGT	EPA 8270D	
Benzo[a]anthracene	ND	mg/kg dry	0.00712	0.0142	7/31/20 17:48	TGT	EPA 8270D	
Benzo[a]pyrene	ND	mg/kg dry	0.00712	0.0142	7/31/20 17:48	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	mg/kg dry	0.00712	0.0142	7/31/20 17:48	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	mg/kg dry	0.00712	0.0142	7/31/20 17:48	TGT	EPA 8270D	
Chrysene	ND	mg/kg dry	0.00712	0.0142	7/31/20 17:48	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	mg/kg dry	0.00712	0.0142	7/31/20 17:48	TGT	EPA 8270D	
Fluoranthene	ND	mg/kg dry	0.00712	0.0142	7/31/20 17:48	TGT	EPA 8270D	
Fluorene	ND	mg/kg dry	0.00712	0.0142	7/31/20 17:48	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	mg/kg dry	0.00712	0.0142	7/31/20 17:48	TGT	EPA 8270D	
Naphthalene	ND	mg/kg dry	0.00712	0.0142	7/31/20 17:48	TGT	EPA 8270D	
Phenanthrene	ND	mg/kg dry	0.00712	0.0142	7/31/20 17:48	TGT	EPA 8270D	
Pyrene	ND	mg/kg dry	0.00712	0.0142	7/31/20 17:48	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*91.4%*		*60-130*		*7/31/20 17:48*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/kg dry	36.4	91.0	7/29/20 7:07	taz	NWTPH-Dx	
Lube Oil	ND	mg/kg dry	182	364	7/29/20 7:07	taz	NWTPH-Dx	
Surrogate: Hexacosane	*94.0%*		*50-150*		*7/29/20 7:07*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/kg dry	9.16	18.3	7/27/20 13:08	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*95.2%*		*70-130*		*7/27/20 13:08*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: S-B37-5-7-071520
Lab/Sample Number: MAG0582-15 Collect Date: 07/14/20 11:00 - 07/15/20 11:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00458	0.114	7/27/20 13:08	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0458	0.114	7/27/20 13:08	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Chloroform	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Ethylbenzene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-B37-5-7-071520

Lab/Sample Number: MAG0582-15 Collect Date: 07/14/20 11:00 - 07/15/20 11:00

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Isopropylbenzene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0458	0.114	7/27/20 13:08	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0458	0.114	7/27/20 13:08	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0458	0.114	7/27/20 13:08	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Naphthalene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
n-Butylbenzene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
n-Propylbenzene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.00916	0.0229	7/27/20 13:08	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*114%*		*70-130*		*7/27/20 13:08*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*87.9%*		*70-130*		*7/27/20 13:08*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*95.0%*		*70-130*		*7/27/20 13:08*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-B38-4-6-071520

Lab/Sample Number: MAG0582-16 Collect Date: 07/14/20 09:20 - 07/15/20 09:20

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	71.7	%	0.100	0.100	7/24/20 9:09	BMM	SM 2540 G	
Metals by ICP-MS								
Silver	ND	mg/kg dry	0.00483	0.847	8/4/20 20:48	MYM	EPA 6020B	
Arsenic	9.85	mg/kg dry	0.0423	0.0847	8/5/20 21:22	MYM	EPA 6020B	
Barium	115	mg/kg dry	0.00847	0.847	8/4/20 20:48	MYM	EPA 6020B	
Cadmium	ND	mg/kg dry	0.00847	0.847	8/4/20 20:48	MYM	EPA 6020B	
Chromium	23.1	mg/kg dry	0.00423	0.847	8/4/20 20:48	MYM	EPA 6020B	
Mercury	0.163	mg/kg dry	0.000847	0.0847	8/4/20 20:48	MYM	EPA 6020B	
Lead	34.9	mg/kg dry	0.0423	0.847	8/4/20 20:48	MYM	EPA 6020B	
Selenium	ND	mg/kg dry	0.00500	0.847	8/6/20 22:13	MYM	EPA 6020B	
Semivolatiles								
1-Methylnaphthalene	0.0763	mg/kg dry	0.00696	0.0139	7/31/20 20:12	TGT	EPA 8270D	
2-Methylnaphthalene	ND	mg/kg dry	0.00696	0.0139	7/31/20 20:12	TGT	EPA 8270D	
Acenaphthene	ND	mg/kg dry	0.00696	0.0139	7/31/20 20:12	TGT	EPA 8270D	
Acenaphthylene	ND	mg/kg dry	0.00696	0.0139	7/31/20 20:12	TGT	EPA 8270D	
Anthracene	ND	mg/kg dry	0.00696	0.0139	7/31/20 20:12	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	mg/kg dry	0.00696	0.0139	7/31/20 20:12	TGT	EPA 8270D	
Benzo[a]anthracene	0.0202	mg/kg dry	0.00696	0.0139	7/31/20 20:12	TGT	EPA 8270D	
Benzo[a]pyrene	ND	mg/kg dry	0.00696	0.0139	7/31/20 20:12	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	mg/kg dry	0.00696	0.0139	7/31/20 20:12	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	mg/kg dry	0.00696	0.0139	7/31/20 20:12	TGT	EPA 8270D	
Chrysene	0.0224	mg/kg dry	0.00696	0.0139	7/31/20 20:12	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	mg/kg dry	0.00696	0.0139	7/31/20 20:12	TGT	EPA 8270D	
Fluoranthene	0.0693	mg/kg dry	0.00696	0.0139	7/31/20 20:12	TGT	EPA 8270D	
Fluorene	ND	mg/kg dry	0.00696	0.0139	7/31/20 20:12	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	mg/kg dry	0.00696	0.0139	7/31/20 20:12	TGT	EPA 8270D	
Naphthalene	0.0172	mg/kg dry	0.00696	0.0139	7/31/20 20:12	TGT	EPA 8270D	
Phenanthrene	0.0210	mg/kg dry	0.00696	0.0139	7/31/20 20:12	TGT	EPA 8270D	
Pyrene	0.113	mg/kg dry	0.00696	0.0139	7/31/20 20:12	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*81.5%*		*60-130*		*7/31/20 20:12*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/kg dry	141	352	7/30/20 14:31	taz	NWTPH-Dx	
Lube Oil	7490	mg/kg dry	352	705	7/30/20 14:31	taz	NWTPH-Dx	
Surrogate: Hexacosane	*95.8%*		*50-150*		*7/30/20 14:31*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/kg dry	4.68	18.7	7/29/20 22:31	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*120%*		*70-130*		*7/29/20 22:31*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: S-B38-4-6-071520
Lab/Sample Number: MAG0582-16 Collect Date: 07/14/20 09:20 - 07/15/20 09:20
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	0.0239	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00468	0.117	7/29/20 22:31	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0468	0.117	7/29/20 22:31	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Chloroform	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Ethylbenzene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-B38-4-6-071520

Lab/Sample Number: MAG0582-16 Collect Date: 07/14/20 09:20 - 07/15/20 09:20

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Isopropylbenzene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0468	0.117	7/29/20 22:31	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0468	0.117	7/29/20 22:31	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0468	0.117	7/29/20 22:31	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Naphthalene	0.0286	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
n-Butylbenzene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
n-Propylbenzene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.00937	0.0234	7/29/20 22:31	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*106%*		*70-130*		*7/29/20 22:31*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*107%*		*70-130*		*7/29/20 22:31*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*98.6%*		*70-130*		*7/29/20 22:31*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-B39-5-7-071520
Lab/Sample Number: MAG0582-17 Collect Date: 07/14/20 09:45 - 07/15/20 09:45
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	84.0	%	0.100	0.100	7/30/20 9:24	JBM	SM 2540 G	
Metals by ICP-MS								
Silver	ND	mg/kg dry	0.00396	0.694	8/4/20 20:55	MYM	EPA 6020B	
Arsenic	2.82	mg/kg dry	0.0347	0.0694	8/5/20 21:29	MYM	EPA 6020B	
Barium	46.3	mg/kg dry	0.00694	0.694	8/4/20 20:55	MYM	EPA 6020B	
Cadmium	ND	mg/kg dry	0.00694	0.694	8/4/20 20:55	MYM	EPA 6020B	
Chromium	15.2	mg/kg dry	0.00347	0.694	8/4/20 20:55	MYM	EPA 6020B	
Mercury	ND	mg/kg dry	0.000694	0.0694	8/4/20 20:55	MYM	EPA 6020B	
Lead	5.10	mg/kg dry	0.0347	0.694	8/4/20 20:55	MYM	EPA 6020B	
Selenium	ND	mg/kg dry	0.00410	0.694	8/6/20 20:36	MYM	EPA 6020B	
Semivolatiles								
1-Methylnaphthalene	ND	mg/kg dry	0.00597	0.0119	8/4/20 21:38	TGT	EPA 8270D	
2-Methylnaphthalene	ND	mg/kg dry	0.00597	0.0119	8/4/20 21:38	TGT	EPA 8270D	
Acenaphthene	ND	mg/kg dry	0.00597	0.0119	8/4/20 21:38	TGT	EPA 8270D	
Acenaphthylene	ND	mg/kg dry	0.00597	0.0119	8/4/20 21:38	TGT	EPA 8270D	
Anthracene	ND	mg/kg dry	0.00597	0.0119	8/4/20 21:38	TGT	EPA 8270D	
Benzo(g,h,i)perylene	0.0126	mg/kg dry	0.00597	0.0119	8/4/20 21:38	TGT	EPA 8270D	
Benzo[a]anthracene	ND	mg/kg dry	0.00597	0.0119	8/4/20 21:38	TGT	EPA 8270D	
Benzo[a]pyrene	ND	mg/kg dry	0.00597	0.0119	8/4/20 21:38	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	mg/kg dry	0.00597	0.0119	8/4/20 21:38	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	mg/kg dry	0.00597	0.0119	8/4/20 21:38	TGT	EPA 8270D	
Chrysene	ND	mg/kg dry	0.00597	0.0119	8/4/20 21:38	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	mg/kg dry	0.00597	0.0119	8/4/20 21:38	TGT	EPA 8270D	
Fluoranthene	0.0588	mg/kg dry	0.00597	0.0119	8/4/20 21:38	TGT	EPA 8270D	
Fluorene	ND	mg/kg dry	0.00597	0.0119	8/4/20 21:38	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	mg/kg dry	0.00597	0.0119	8/4/20 21:38	TGT	EPA 8270D	
Naphthalene	ND	mg/kg dry	0.00597	0.0119	8/4/20 21:38	TGT	EPA 8270D	
Phenanthrene	ND	mg/kg dry	0.00597	0.0119	8/4/20 21:38	TGT	EPA 8270D	
Pyrene	ND	mg/kg dry	0.00597	0.0119	8/4/20 21:38	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*73.4%*		*60-130*		*8/4/20 21:38*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/kg dry	12.5	31.1	7/29/20 8:16	taz	NWTPH-Dx	
Lube Oil	ND	mg/kg dry	62.3	125	7/29/20 8:16	taz	NWTPH-Dx	
Surrogate: Hexacosane	*90.2%*		*50-150*		*7/29/20 8:16*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/kg dry	7.89	15.8	7/27/20 13:38	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*103%*		*70-130*		*7/27/20 13:38*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: S-B39-5-7-071520
Lab/Sample Number: MAG0582-17 Collect Date: 07/14/20 09:45 - 07/15/20 09:45
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00394	0.0986	7/27/20 13:38	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0394	0.0986	7/27/20 13:38	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Chloroform	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Ethylbenzene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-B39-5-7-071520

Lab/Sample Number: MAG0582-17 Collect Date: 07/14/20 09:45 - 07/15/20 09:45

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Isopropylbenzene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0394	0.0986	7/27/20 13:38	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0394	0.0986	7/27/20 13:38	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0394	0.0986	7/27/20 13:38	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Naphthalene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
n-Butylbenzene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
n-Propylbenzene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.00789	0.0197	7/27/20 13:38	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*107%*		*70-130*		*7/27/20 13:38*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*96.6%*		*70-130*		*7/27/20 13:38*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*93.9%*		*70-130*		*7/27/20 13:38*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-B40-5-7-071520

Lab/Sample Number: MAG0582-18 Collect Date: 07/14/20 10:15 - 07/15/20 10:15

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	82.7	%	0.100	0.100	7/30/20 9:24	JBM	SM 2540 G	
Metals by ICP-MS								
Silver	ND	mg/kg dry	0.00394	0.691	8/4/20 21:20	MYM	EPA 6020B	
Arsenic	5.85	mg/kg dry	0.0346	0.0691	8/5/20 21:54	MYM	EPA 6020B	
Barium	74.6	mg/kg dry	0.00691	0.691	8/4/20 21:20	MYM	EPA 6020B	
Cadmium	ND	mg/kg dry	0.00691	0.691	8/4/20 21:20	MYM	EPA 6020B	
Chromium	23.4	mg/kg dry	0.00346	0.691	8/4/20 21:20	MYM	EPA 6020B	
Mercury	ND	mg/kg dry	0.000691	0.0691	8/4/20 21:20	MYM	EPA 6020B	
Lead	4.90	mg/kg dry	0.0346	0.691	8/4/20 21:20	MYM	EPA 6020B	
Selenium	ND	mg/kg dry	0.00408	0.691	8/6/20 22:19	MYM	EPA 6020B	
Semivolatiles								
1-Methylnaphthalene	ND	mg/kg dry	0.00599	0.0120	8/4/20 19:40	TGT	EPA 8270D	
2-Methylnaphthalene	ND	mg/kg dry	0.00599	0.0120	8/4/20 19:40	TGT	EPA 8270D	
Acenaphthene	ND	mg/kg dry	0.00599	0.0120	8/4/20 19:40	TGT	EPA 8270D	
Acenaphthylene	ND	mg/kg dry	0.00599	0.0120	8/4/20 19:40	TGT	EPA 8270D	
Anthracene	ND	mg/kg dry	0.00599	0.0120	8/4/20 19:40	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	mg/kg dry	0.00599	0.0120	8/4/20 19:40	TGT	EPA 8270D	
Benzo[a]anthracene	ND	mg/kg dry	0.00599	0.0120	8/4/20 19:40	TGT	EPA 8270D	
Benzo[a]pyrene	ND	mg/kg dry	0.00599	0.0120	8/4/20 19:40	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	mg/kg dry	0.00599	0.0120	8/4/20 19:40	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	mg/kg dry	0.00599	0.0120	8/4/20 19:40	TGT	EPA 8270D	
Chrysene	ND	mg/kg dry	0.00599	0.0120	8/4/20 19:40	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	mg/kg dry	0.00599	0.0120	8/4/20 19:40	TGT	EPA 8270D	
Fluoranthene	ND	mg/kg dry	0.00599	0.0120	8/4/20 19:40	TGT	EPA 8270D	
Fluorene	ND	mg/kg dry	0.00599	0.0120	8/4/20 19:40	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	mg/kg dry	0.00599	0.0120	8/4/20 19:40	TGT	EPA 8270D	
Naphthalene	ND	mg/kg dry	0.00599	0.0120	8/4/20 19:40	TGT	EPA 8270D	
Phenanthrene	ND	mg/kg dry	0.00599	0.0120	8/4/20 19:40	TGT	EPA 8270D	
Pyrene	ND	mg/kg dry	0.00599	0.0120	8/4/20 19:40	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*69.4%*		*60-130*		*8/4/20 19:40*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/kg dry	59.2	148	7/29/20 8:51	taz	NWTPH-Dx	
Lube Oil	ND	mg/kg dry	148	296	7/29/20 8:51	taz	NWTPH-Dx	
Surrogate: Hexacosane	*83.2%*		*50-150*		*7/29/20 8:51*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/kg dry	7.90	15.8	7/27/20 14:09	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*91.6%*		*70-130*		*7/27/20 14:09*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: S-B40-5-7-071520
Lab/Sample Number: MAG0582-18 Collect Date: 07/14/20 10:15 - 07/15/20 10:15
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00395	0.0987	7/27/20 14:09	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0395	0.0987	7/27/20 14:09	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Chloroform	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Ethylbenzene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-B40-5-7-071520

Lab/Sample Number: MAG0582-18 Collect Date: 07/14/20 10:15 - 07/15/20 10:15

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Isopropylbenzene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0395	0.0987	7/27/20 14:09	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0395	0.0987	7/27/20 14:09	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0395	0.0987	7/27/20 14:09	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Naphthalene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
n-Butylbenzene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
n-Propylbenzene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.00790	0.0197	7/27/20 14:09	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*115%*		*70-130*		*7/27/20 14:09*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*85.6%*		*70-130*		*7/27/20 14:09*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*94.9%*		*70-130*		*7/27/20 14:09*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-B41-3-5-071520

Lab/Sample Number: MAG0582-19 Collect Date: 07/14/20 12:15 - 07/15/20 12:15

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	67.8	%	0.100	0.100	7/30/20 9:24	JBM	SM 2540 G	
Metals by ICP-MS								
Silver	ND	mg/kg dry	0.00520	0.912	8/4/20 21:52	MYM	EPA 6020B	
Arsenic	11.9	mg/kg dry	0.0456	0.0912	8/5/20 22:01	MYM	EPA 6020B	
Barium	92.6	mg/kg dry	0.00912	0.912	8/4/20 21:52	MYM	EPA 6020B	
Cadmium	ND	mg/kg dry	0.00912	0.912	8/4/20 21:52	MYM	EPA 6020B	
Chromium	23.5	mg/kg dry	0.00456	0.912	8/4/20 21:52	MYM	EPA 6020B	
Mercury	0.100	mg/kg dry	0.000912	0.0912	8/4/20 21:52	MYM	EPA 6020B	
Lead	6.87	mg/kg dry	0.0456	0.912	8/4/20 21:52	MYM	EPA 6020B	
Selenium	ND	mg/kg dry	0.00538	0.912	8/6/20 22:25	MYM	EPA 6020B	
Semivolatiles								
1-Methylnaphthalene	ND	mg/kg dry	0.00746	0.0149	8/4/20 20:04	TGT	EPA 8270D	
2-Methylnaphthalene	ND	mg/kg dry	0.00746	0.0149	8/4/20 20:04	TGT	EPA 8270D	
Acenaphthene	ND	mg/kg dry	0.00746	0.0149	8/4/20 20:04	TGT	EPA 8270D	
Acenaphthylene	ND	mg/kg dry	0.00746	0.0149	8/4/20 20:04	TGT	EPA 8270D	
Anthracene	ND	mg/kg dry	0.00746	0.0149	8/4/20 20:04	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	mg/kg dry	0.00746	0.0149	8/4/20 20:04	TGT	EPA 8270D	
Benzo[a]anthracene	ND	mg/kg dry	0.00746	0.0149	8/4/20 20:04	TGT	EPA 8270D	
Benzo[a]pyrene	ND	mg/kg dry	0.00746	0.0149	8/4/20 20:04	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	mg/kg dry	0.00746	0.0149	8/4/20 20:04	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	mg/kg dry	0.00746	0.0149	8/4/20 20:04	TGT	EPA 8270D	
Chrysene	ND	mg/kg dry	0.00746	0.0149	8/4/20 20:04	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	mg/kg dry	0.00746	0.0149	8/4/20 20:04	TGT	EPA 8270D	
Fluoranthene	ND	mg/kg dry	0.00746	0.0149	8/4/20 20:04	TGT	EPA 8270D	
Fluorene	ND	mg/kg dry	0.00746	0.0149	8/4/20 20:04	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	mg/kg dry	0.00746	0.0149	8/4/20 20:04	TGT	EPA 8270D	
Naphthalene	ND	mg/kg dry	0.00746	0.0149	8/4/20 20:04	TGT	EPA 8270D	
Phenanthrene	ND	mg/kg dry	0.00746	0.0149	8/4/20 20:04	TGT	EPA 8270D	
Pyrene	ND	mg/kg dry	0.00746	0.0149	8/4/20 20:04	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*82.7%*		*60-130*		*8/4/20 20:04*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/kg dry	13.9	34.7	7/29/20 9:25	taz	NWTPH-Dx	
Lube Oil	ND	mg/kg dry	69.4	139	7/29/20 9:25	taz	NWTPH-Dx	
Surrogate: Hexacosane	*89.7%*		*50-150*		*7/29/20 9:25*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/kg dry	8.99	18.0	7/27/20 14:39	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*90.0%*		*70-130*		*7/27/20 14:39*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: S-B41-3-5-071520
Lab/Sample Number: MAG0582-19 Collect Date: 07/14/20 12:15 - 07/15/20 12:15
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00449	0.112	7/27/20 14:39	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0449	0.112	7/27/20 14:39	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Chloroform	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Ethylbenzene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-B41-3-5-071520

Lab/Sample Number: MAG0582-19 Collect Date: 07/14/20 12:15 - 07/15/20 12:15

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Isopropylbenzene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0449	0.112	7/27/20 14:39	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0449	0.112	7/27/20 14:39	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0449	0.112	7/27/20 14:39	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Naphthalene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
n-Butylbenzene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
n-Propylbenzene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.00899	0.0225	7/27/20 14:39	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*114%*		*70-130*		*7/27/20 14:39*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*84.0%*		*70-130*		*7/27/20 14:39*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*101%*		*70-130*		*7/27/20 14:39*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-B43-2-4-071520

Lab/Sample Number: MAG0582-20 Collect Date: 07/14/20 08:30 - 07/15/20 08:30

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	85.8	%	0.100	0.100	7/30/20 9:24	JBM	SM 2540 G	
Metals by ICP-MS								
Silver	ND	mg/kg dry	0.00344	0.603	8/4/20 22:18	MYM	EPA 6020B	
Arsenic	4.55	mg/kg dry	0.0302	0.0603	8/6/20 20:04	MYM	EPA 6020B	
Barium	70.1	mg/kg dry	0.00603	0.603	8/6/20 20:04	MYM	EPA 6020B	
Cadmium	ND	mg/kg dry	0.00603	0.603	8/4/20 22:18	MYM	EPA 6020B	
Chromium	21.5	mg/kg dry	0.00302	0.603	8/6/20 20:04	MYM	EPA 6020B	
Mercury	0.0627	mg/kg dry	0.000603	0.00603	8/4/20 22:18	MYM	EPA 6020B	
Lead	14.9	mg/kg dry	0.0302	0.603	8/4/20 22:18	MYM	EPA 6020B	
Selenium	ND	mg/kg dry	0.00356	0.603	8/6/20 20:04	MYM	EPA 6020B	
Semivolatiles								
1-Methylnaphthalene	0.0416	mg/kg dry	0.00572	0.0114	8/4/20 22:02	TGT	EPA 8270D	
2-Methylnaphthalene	0.0375	mg/kg dry	0.00572	0.0114	8/4/20 22:02	TGT	EPA 8270D	
Acenaphthene	ND	mg/kg dry	0.00572	0.0114	8/4/20 22:02	TGT	EPA 8270D	
Acenaphthylene	ND	mg/kg dry	0.00572	0.0114	8/4/20 22:02	TGT	EPA 8270D	
Anthracene	ND	mg/kg dry	0.00572	0.0114	8/4/20 22:02	TGT	EPA 8270D	
Benzo(g,h,i)perylene	0.0160	mg/kg dry	0.00572	0.0114	8/4/20 22:02	TGT	EPA 8270D	
Benzo[a]anthracene	0.0175	mg/kg dry	0.00572	0.0114	8/4/20 22:02	TGT	EPA 8270D	
Benzo[a]pyrene	ND	mg/kg dry	0.00572	0.0114	8/4/20 22:02	TGT	EPA 8270D	
Benzo[b]fluoranthene	0.0130	mg/kg dry	0.00572	0.0114	8/4/20 22:02	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	mg/kg dry	0.00572	0.0114	8/4/20 22:02	TGT	EPA 8270D	
Chrysene	0.0128	mg/kg dry	0.00572	0.0114	8/4/20 22:02	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	mg/kg dry	0.00572	0.0114	8/4/20 22:02	TGT	EPA 8270D	
Fluoranthene	0.0675	mg/kg dry	0.00572	0.0114	8/4/20 22:02	TGT	EPA 8270D	
Fluorene	ND	mg/kg dry	0.00572	0.0114	8/4/20 22:02	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	mg/kg dry	0.00572	0.0114	8/4/20 22:02	TGT	EPA 8270D	
Naphthalene	0.0564	mg/kg dry	0.00572	0.0114	8/4/20 22:02	TGT	EPA 8270D	
Phenanthrene	0.0289	mg/kg dry	0.00572	0.0114	8/4/20 22:02	TGT	EPA 8270D	
Pyrene	0.0158	mg/kg dry	0.00572	0.0114	8/4/20 22:02	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*83.0%*		*60-130*		*8/4/20 22:02*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/kg dry	28.6	114	7/29/20 10:00	taz	NWTPH-Dx	
Lube Oil	429	mg/kg dry	143	286	7/29/20 10:00	taz	NWTPH-Dx	
Surrogate: Hexacosane	*87.3%*		*50-150*		*7/29/20 10:00*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	19.4	mg/kg dry	7.33	14.7	7/27/20 15:10	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*96.0%*		*70-130*		*7/27/20 15:10*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: S-B43-2-4-071520
Lab/Sample Number: MAG0582-20 Collect Date: 07/14/20 08:30 - 07/15/20 08:30
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	0.364	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	0.0762	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00366	0.0916	7/27/20 15:10	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0366	0.0916	7/27/20 15:10	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Chloroform	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Ethylbenzene	0.0392	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-B43-2-4-071520

Lab/Sample Number: MAG0582-20 Collect Date: 07/14/20 08:30 - 07/15/20 08:30

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Isopropylbenzene	0.0213	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	0.0791	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0366	0.0916	7/27/20 15:10	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0366	0.0916	7/27/20 15:10	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0366	0.0916	7/27/20 15:10	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Naphthalene	0.180	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
n-Butylbenzene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
n-Propylbenzene	0.0440	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
o-Xylene (MCL for total)	0.0784	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.00733	0.0183	7/27/20 15:10	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*110%*		*70-130*		*7/27/20 15:10*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*90.0%*		*70-130*		*7/27/20 15:10*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*88.0%*		*70-130*		*7/27/20 15:10*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: SD-01-0-0.5-071520

Lab/Sample Number: MAG0582-21 Collect Date: 07/14/20 13:00 - 07/15/20 13:00

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	58.0	%	0.100	0.100	7/30/20 9:24	JBM	SM 2540 G	
Metals by ICP-MS								
Silver	ND	mg/kg dry	0.00592	1.04	8/4/20 22:25	MYM	EPA 6020B	
Arsenic	3.32	mg/kg dry	0.0519	0.104	8/6/20 20:11	MYM	EPA 6020B	
Barium	132	mg/kg dry	0.0104	1.04	8/6/20 20:11	MYM	EPA 6020B	
Cadmium	ND	mg/kg dry	0.0104	1.04	8/4/20 22:25	MYM	EPA 6020B	
Chromium	46.7	mg/kg dry	0.00519	1.04	8/6/20 20:11	MYM	EPA 6020B	
Mercury	0.0883	mg/kg dry	0.00104	0.0104	8/4/20 22:25	MYM	EPA 6020B	
Lead	45.3	mg/kg dry	0.0519	1.04	8/4/20 22:25	MYM	EPA 6020B	
Selenium	ND	mg/kg dry	0.00613	1.04	8/6/20 20:11	MYM	EPA 6020B	
Semivolatiles								
1-Methylnaphthalene	ND	mg/kg dry	0.00868	0.0174	8/4/20 22:25	TGT	EPA 8270D	
2-Methylnaphthalene	ND	mg/kg dry	0.00868	0.0174	8/4/20 22:25	TGT	EPA 8270D	
Acenaphthene	ND	mg/kg dry	0.00868	0.0174	8/4/20 22:25	TGT	EPA 8270D	
Acenaphthylene	ND	mg/kg dry	0.00868	0.0174	8/4/20 22:25	TGT	EPA 8270D	
Anthracene	ND	mg/kg dry	0.00868	0.0174	8/4/20 22:25	TGT	EPA 8270D	
Benzo(g,h,i)perylene	0.107	mg/kg dry	0.00868	0.0174	8/4/20 22:25	TGT	EPA 8270D	
Benzo[a]anthracene	0.0544	mg/kg dry	0.00868	0.0174	8/4/20 22:25	TGT	EPA 8270D	
Benzo[a]pyrene	0.105	mg/kg dry	0.00868	0.0174	8/4/20 22:25	TGT	EPA 8270D	
Benzo[b]fluoranthene	0.200	mg/kg dry	0.00868	0.0174	8/4/20 22:25	TGT	EPA 8270D	
Benzo[k]fluoranthene	0.0605	mg/kg dry	0.00868	0.0174	8/4/20 22:25	TGT	EPA 8270D	
Chrysene	0.171	mg/kg dry	0.00868	0.0174	8/4/20 22:25	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	mg/kg dry	0.00868	0.0174	8/4/20 22:25	TGT	EPA 8270D	
Fluoranthene	0.262	mg/kg dry	0.00868	0.0174	8/4/20 22:25	TGT	EPA 8270D	
Fluorene	ND	mg/kg dry	0.00868	0.0174	8/4/20 22:25	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	0.0500	mg/kg dry	0.00868	0.0174	8/4/20 22:25	TGT	EPA 8270D	
Naphthalene	0.0183	mg/kg dry	0.00868	0.0174	8/4/20 22:25	TGT	EPA 8270D	
Phenanthrene	0.0850	mg/kg dry	0.00868	0.0174	8/4/20 22:25	TGT	EPA 8270D	
Pyrene	0.158	mg/kg dry	0.00868	0.0174	8/4/20 22:25	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*67.2%*		*60-130*		*8/4/20 22:25*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/kg dry	18.1	45.3	7/29/20 10:35	taz	NWTPH-Dx	
Lube Oil	672	mg/kg dry	90.6	181	7/29/20 10:35	taz	NWTPH-Dx	
Surrogate: Hexacosane	*64.9%*		*50-150*		*7/29/20 10:35*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/kg dry	16.6	33.2	7/27/20 15:41	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*102%*		*70-130*		*7/27/20 15:41*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: SD-01-0-0.5-071520
Lab/Sample Number: MAG0582-21 Collect Date: 07/14/20 13:00 - 07/15/20 13:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00829	0.207	7/27/20 15:41	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0829	0.207	7/27/20 15:41	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Chloroform	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Ethylbenzene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: SD-01-0-0.5-071520
Lab/Sample Number: MAG0582-21 Collect Date: 07/14/20 13:00 - 07/15/20 13:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Isopropylbenzene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0829	0.207	7/27/20 15:41	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0829	0.207	7/27/20 15:41	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0829	0.207	7/27/20 15:41	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Naphthalene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
n-Butylbenzene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
n-Propylbenzene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Toluene	0.338	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.0166	0.0415	7/27/20 15:41	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*105%*		*70-130*		*7/27/20 15:41*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*95.9%*		*70-130*		*7/27/20 15:41*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*101%*		*70-130*		*7/27/20 15:41*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-B30-071520
Lab/Sample Number: MAG0582-22 Collect Date: 07/15/20 08:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS								
Dissolved Silver	ND	mg/L	0.000100	0.00100	8/4/20 12:18	MYM	EPA 200.8	
Dissolved Arsenic	0.00216	mg/L	0.0000850	0.00100	8/4/20 12:18	MYM	EPA 200.8	
Dissolved Barium	0.0104	mg/L	0.000157	0.00100	8/4/20 12:18	MYM	EPA 200.8	
Dissolved Cadmium	ND	mg/L	0.0000670	0.00100	8/4/20 12:18	MYM	EPA 200.8	
Dissolved Chromium	ND	mg/L	0.0000900	0.00100	8/4/20 12:18	MYM	EPA 200.8	
Dissolved Mercury-Icpms	ND	mg/L	0.000100	0.000100	8/4/20 12:18	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.0000660	0.00100	8/4/20 12:18	MYM	EPA 200.8	
Dissolved Selenium	ND	mg/L	0.000290	0.00100	8/4/20 12:18	MYM	EPA 200.8	
Mercury								
Mercury	ND	ug/L	0.00200	0.0100	7/28/20 15:49	TEC	EPA 245.7	
Semivolatiles								
1-Methylnaphthalene	ND	ug/L	0.0250	0.0500	7/24/20 20:19	TGT	EPA 8270D	
2-Methylnaphthalene	ND	ug/L	0.0250	0.0500	7/24/20 20:19	TGT	EPA 8270D	
Acenaphthene	ND	ug/L	0.0250	0.0500	7/24/20 20:19	TGT	EPA 8270D	
Acenaphthylene	ND	ug/L	0.0250	0.0500	7/24/20 20:19	TGT	EPA 8270D	
Anthracene	ND	ug/L	0.0250	0.0500	7/24/20 20:19	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	ug/L	0.0250	0.0500	7/24/20 20:19	TGT	EPA 8270D	
Benzo[a]anthracene	ND	ug/L	0.0250	0.0500	7/24/20 20:19	TGT	EPA 8270D	
Benzo[a]pyrene	ND	ug/L	0.0250	0.0500	7/24/20 20:19	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 20:19	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 20:19	TGT	EPA 8270D	
Chrysene	ND	ug/L	0.0250	0.0500	7/24/20 20:19	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	ug/L	0.0250	0.0500	7/24/20 20:19	TGT	EPA 8270D	
Fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 20:19	TGT	EPA 8270D	
Fluorene	ND	ug/L	0.0250	0.0500	7/24/20 20:19	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.0250	0.0500	7/24/20 20:19	TGT	EPA 8270D	
Naphthalene	ND	ug/L	0.0250	0.0500	7/24/20 20:19	TGT	EPA 8270D	
Phenanthrene	ND	ug/L	0.0250	0.0500	7/24/20 20:19	TGT	EPA 8270D	
Pyrene	ND	ug/L	0.0250	0.0500	7/24/20 20:19	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*105%*		*65-135*		*7/24/20 20:19*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/L	0.219	0.273	7/28/20 15:05	taz	NWTPH-Dx	
Lube Oil	ND	mg/L	0.273	0.546	7/28/20 15:05	taz	NWTPH-Dx	
Surrogate: Hexacosane	*92.3%*		*50-150*		*7/28/20 15:05*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/L	0.100	0.200	7/23/20 13:11	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*84.8%*		*70-130*		*7/23/20 13:11*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: GW-B30-071520
Lab/Sample Number: MAG0582-22 Collect Date: 07/15/20 08:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
2-hexanone	ND	ug/L	0.500	2.50	7/23/20 13:11	TEC	EPA 8260C	
Acetone	4.02	ug/L	0.500	2.50	7/23/20 13:11	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Benzene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	1.01	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
DBCP	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
EDB	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Ethylbenzene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-B30-071520

Lab/Sample Number: MAG0582-22 Collect Date: 07/15/20 08:00

Date Received: 07/16/20 14:04 Collected By:

Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Isopropylbenzene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	0.500	2.50	7/23/20 13:11	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	0.500	2.50	7/23/20 13:11	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	0.500	2.50	7/23/20 13:11	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Naphthalene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
n-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
n-Propylbenzene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
sec-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Styrene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Toluene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Vinyl Chloride	4.52	ug/L	0.100	0.500	7/23/20 13:11	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*118%*		*70-130*		*7/23/20 13:11*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*82.5%*		*70-130*		*7/23/20 13:11*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*95.0%*		*70-130*		*7/23/20 13:11*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-B37-071520
Lab/Sample Number: MAG0582-23 Collect Date: 07/15/20 12:15
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS								
Dissolved Silver	ND	mg/L	0.000100	0.00100	8/4/20 12:37	MYM	EPA 200.8	
Dissolved Arsenic	0.0104	mg/L	0.0000850	0.00100	8/4/20 12:37	MYM	EPA 200.8	
Dissolved Barium	0.00410	mg/L	0.000157	0.00100	8/4/20 12:37	MYM	EPA 200.8	
Dissolved Cadmium	ND	mg/L	0.0000670	0.00100	8/4/20 12:37	MYM	EPA 200.8	
Dissolved Chromium	ND	mg/L	0.0000900	0.00100	8/4/20 12:37	MYM	EPA 200.8	
Dissolved Mercury-Icpms	ND	mg/L	0.000100	0.000100	8/4/20 12:37	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.0000660	0.00100	8/4/20 12:37	MYM	EPA 200.8	
Dissolved Selenium	ND	mg/L	0.000290	0.00100	8/4/20 12:37	MYM	EPA 200.8	
Mercury								
Mercury	ND	ug/L	0.00200	0.0100	7/28/20 15:57	TEC	EPA 245.7	
Semivolatiles								
1-Methylnaphthalene	ND	ug/L	0.0250	0.0500	7/24/20 20:42	TGT	EPA 8270D	
2-Methylnaphthalene	ND	ug/L	0.0250	0.0500	7/24/20 20:42	TGT	EPA 8270D	
Acenaphthene	ND	ug/L	0.0250	0.0500	7/24/20 20:42	TGT	EPA 8270D	
Acenaphthylene	ND	ug/L	0.0250	0.0500	7/24/20 20:42	TGT	EPA 8270D	
Anthracene	ND	ug/L	0.0250	0.0500	7/24/20 20:42	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	ug/L	0.0250	0.0500	7/24/20 20:42	TGT	EPA 8270D	
Benzo[a]anthracene	ND	ug/L	0.0250	0.0500	7/24/20 20:42	TGT	EPA 8270D	
Benzo[a]pyrene	ND	ug/L	0.0250	0.0500	7/24/20 20:42	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 20:42	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 20:42	TGT	EPA 8270D	
Chrysene	ND	ug/L	0.0250	0.0500	7/24/20 20:42	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	ug/L	0.0250	0.0500	7/24/20 20:42	TGT	EPA 8270D	
Fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 20:42	TGT	EPA 8270D	
Fluorene	ND	ug/L	0.0250	0.0500	7/24/20 20:42	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.0250	0.0500	7/24/20 20:42	TGT	EPA 8270D	
Naphthalene	ND	ug/L	0.0250	0.0500	7/24/20 20:42	TGT	EPA 8270D	
Phenanthrene	0.0617	ug/L	0.0250	0.0500	7/24/20 20:42	TGT	EPA 8270D	
Pyrene	0.125	ug/L	0.0250	0.0500	7/24/20 20:42	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*97.5%*		*65-135*		*7/24/20 20:42*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/L	0.233	0.291	7/28/20 15:40	taz	NWTPH-Dx	
Lube Oil	ND	mg/L	0.291	0.581	7/28/20 15:40	taz	NWTPH-Dx	
Surrogate: Hexacosane	*98.9%*		*50-150*		*7/28/20 15:40*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/L	0.100	0.200	7/23/20 13:41	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*90.8%*		*70-130*		*7/23/20 13:41*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: GW-B37-071520
Lab/Sample Number: MAG0582-23 Collect Date: 07/15/20 12:15
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
2-hexanone	ND	ug/L	0.500	2.50	7/23/20 13:41	TEC	EPA 8260C	
Acetone	3.23	ug/L	0.500	2.50	7/23/20 13:41	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Benzene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
DBCP	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
EDB	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Ethylbenzene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-B37-071520

Lab/Sample Number: MAG0582-23 Collect Date: 07/15/20 12:15

Date Received: 07/16/20 14:04 Collected By:

Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Isopropylbenzene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	0.500	2.50	7/23/20 13:41	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	0.500	2.50	7/23/20 13:41	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	0.500	2.50	7/23/20 13:41	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Naphthalene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
n-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
n-Propylbenzene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
sec-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Styrene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Toluene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.100	0.500	7/23/20 13:41	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*116%*		*70-130*		*7/23/20 13:41*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*86.6%*		*70-130*		*7/23/20 13:41*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*90.4%*		*70-130*		*7/23/20 13:41*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-B39-071520
Lab/Sample Number: MAG0582-24 Collect Date: 07/15/20 11:50
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS								
Dissolved Silver	ND	mg/L	0.000100	0.00100	8/4/20 12:44	MYM	EPA 200.8	
Dissolved Arsenic	0.00424	mg/L	0.0000850	0.00100	8/4/20 12:44	MYM	EPA 200.8	
Dissolved Barium	0.00368	mg/L	0.000157	0.00100	8/4/20 12:44	MYM	EPA 200.8	
Dissolved Cadmium	ND	mg/L	0.0000670	0.00100	8/4/20 12:44	MYM	EPA 200.8	
Dissolved Chromium	ND	mg/L	0.0000900	0.00100	8/4/20 12:44	MYM	EPA 200.8	
Dissolved Mercury-Icpms	ND	mg/L	0.000100	0.000100	8/4/20 12:44	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.0000660	0.00100	8/4/20 12:44	MYM	EPA 200.8	
Dissolved Selenium	0.00113	mg/L	0.000290	0.00100	8/4/20 12:44	MYM	EPA 200.8	
Mercury								
Mercury	ND	ug/L	0.00200	0.0100	7/28/20 16:04	TEC	EPA 245.7	
Semivolatiles								
1-Methylnaphthalene	ND	ug/L	0.0250	0.0500	7/24/20 21:06	TGT	EPA 8270D	
2-Methylnaphthalene	ND	ug/L	0.0250	0.0500	7/24/20 21:06	TGT	EPA 8270D	
Acenaphthene	ND	ug/L	0.0250	0.0500	7/24/20 21:06	TGT	EPA 8270D	
Acenaphthylene	ND	ug/L	0.0250	0.0500	7/24/20 21:06	TGT	EPA 8270D	
Anthracene	ND	ug/L	0.0250	0.0500	7/24/20 21:06	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	ug/L	0.0250	0.0500	7/24/20 21:06	TGT	EPA 8270D	
Benzo[a]anthracene	ND	ug/L	0.0250	0.0500	7/24/20 21:06	TGT	EPA 8270D	
Benzo[a]pyrene	ND	ug/L	0.0250	0.0500	7/24/20 21:06	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 21:06	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 21:06	TGT	EPA 8270D	
Chrysene	ND	ug/L	0.0250	0.0500	7/24/20 21:06	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	ug/L	0.0250	0.0500	7/24/20 21:06	TGT	EPA 8270D	
Fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 21:06	TGT	EPA 8270D	
Fluorene	ND	ug/L	0.0250	0.0500	7/24/20 21:06	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.0250	0.0500	7/24/20 21:06	TGT	EPA 8270D	
Naphthalene	ND	ug/L	0.0250	0.0500	7/24/20 21:06	TGT	EPA 8270D	
Phenanthrene	ND	ug/L	0.0250	0.0500	7/24/20 21:06	TGT	EPA 8270D	
Pyrene	ND	ug/L	0.0250	0.0500	7/24/20 21:06	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*99.7%*		*65-135*		*7/24/20 21:06*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/L	0.261	0.327	7/28/20 16:37	taz	NWTPH-Dx	
Lube Oil	ND	mg/L	0.327	0.654	7/28/20 16:37	taz	NWTPH-Dx	J
Surrogate: Hexacosane	*116%*		*50-150*		*7/28/20 16:37*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/L	0.100	0.200	7/23/20 14:10	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*90.4%*		*70-130*		*7/23/20 14:10*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: GW-B39-071520
Lab/Sample Number: MAG0582-24 Collect Date: 07/15/20 11:50
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
2-hexanone	ND	ug/L	0.500	2.50	7/23/20 14:10	TEC	EPA 8260C	
Acetone	ND	ug/L	0.500	2.50	7/23/20 14:10	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Benzene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
DBCP	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
EDB	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Ethylbenzene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-B39-071520

Lab/Sample Number: MAG0582-24 Collect Date: 07/15/20 11:50

Date Received: 07/16/20 14:04 Collected By:

Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Isopropylbenzene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	0.500	2.50	7/23/20 14:10	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	0.500	2.50	7/23/20 14:10	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	0.500	2.50	7/23/20 14:10	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Naphthalene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
n-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
n-Propylbenzene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
sec-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Styrene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Toluene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.100	0.500	7/23/20 14:10	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*122%*		*70-130*		*7/23/20 14:10*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*86.9%*		*70-130*		*7/23/20 14:10*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*102%*		*70-130*		*7/23/20 14:10*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-B41-071520
Lab/Sample Number: MAG0582-25 Collect Date: 07/15/20 13:30
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS								
Dissolved Silver	ND	mg/L	0.000100	0.00100	8/4/20 12:50	MYM	EPA 200.8	
Dissolved Arsenic	0.00199	mg/L	0.0000850	0.00100	8/4/20 12:50	MYM	EPA 200.8	
Dissolved Barium	0.00459	mg/L	0.000157	0.00100	8/4/20 12:50	MYM	EPA 200.8	
Dissolved Cadmium	ND	mg/L	0.0000670	0.00100	8/4/20 12:50	MYM	EPA 200.8	
Dissolved Chromium	ND	mg/L	0.0000900	0.00100	8/4/20 12:50	MYM	EPA 200.8	
Dissolved Mercury-Icpms	ND	mg/L	0.000100	0.000100	8/4/20 12:50	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.0000660	0.00100	8/4/20 12:50	MYM	EPA 200.8	
Dissolved Selenium	ND	mg/L	0.000290	0.00100	8/4/20 12:50	MYM	EPA 200.8	
Mercury								
Mercury	ND	ug/L	0.00200	0.0100	7/28/20 16:12	TEC	EPA 245.7	
Semivolatiles								
1-Methylnaphthalene	ND	ug/L	0.0250	0.0500	7/24/20 21:29	TGT	EPA 8270D	
2-Methylnaphthalene	ND	ug/L	0.0250	0.0500	7/24/20 21:29	TGT	EPA 8270D	
Acenaphthene	ND	ug/L	0.0250	0.0500	7/24/20 21:29	TGT	EPA 8270D	
Acenaphthylene	ND	ug/L	0.0250	0.0500	7/24/20 21:29	TGT	EPA 8270D	
Anthracene	ND	ug/L	0.0250	0.0500	7/24/20 21:29	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	ug/L	0.0250	0.0500	7/24/20 21:29	TGT	EPA 8270D	
Benzo[a]anthracene	ND	ug/L	0.0250	0.0500	7/24/20 21:29	TGT	EPA 8270D	
Benzo[a]pyrene	ND	ug/L	0.0250	0.0500	7/24/20 21:29	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 21:29	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 21:29	TGT	EPA 8270D	
Chrysene	ND	ug/L	0.0250	0.0500	7/24/20 21:29	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	ug/L	0.0250	0.0500	7/24/20 21:29	TGT	EPA 8270D	
Fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 21:29	TGT	EPA 8270D	
Fluorene	ND	ug/L	0.0250	0.0500	7/24/20 21:29	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.0250	0.0500	7/24/20 21:29	TGT	EPA 8270D	
Naphthalene	ND	ug/L	0.0250	0.0500	7/24/20 21:29	TGT	EPA 8270D	
Phenanthrene	ND	ug/L	0.0250	0.0500	7/24/20 21:29	TGT	EPA 8270D	
Pyrene	ND	ug/L	0.0250	0.0500	7/24/20 21:29	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*99.6%*		*65-135*		*7/24/20 21:29*	*TGT*	*EPA 8270D*	
Diesel	0.913	mg/L	0.238	0.298	7/28/20 17:12	taz	NWTPH-Dx	
Lube Oil	ND	mg/L	0.298	0.595	7/28/20 17:12	taz	NWTPH-Dx	
Surrogate: Hexacosane	*105%*		*50-150*		*7/28/20 17:12*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/L	0.100	0.200	7/23/20 14:40	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*91.2%*		*70-130*		*7/23/20 14:40*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: GW-B41-071520
Lab/Sample Number: MAG0582-25 Collect Date: 07/15/20 13:30
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
2-hexanone	ND	ug/L	0.500	2.50	7/23/20 14:40	TEC	EPA 8260C	
Acetone	3.40	ug/L	0.500	2.50	7/23/20 14:40	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Benzene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
DBCP	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
EDB	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Ethylbenzene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-B41-071520
Lab/Sample Number: MAG0582-25 Collect Date: 07/15/20 13:30
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Isopropylbenzene	0.560	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	0.500	2.50	7/23/20 14:40	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	0.500	2.50	7/23/20 14:40	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	0.500	2.50	7/23/20 14:40	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Naphthalene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
n-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
n-Propylbenzene	0.750	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
sec-Butylbenzene	0.630	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Styrene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Toluene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.100	0.500	7/23/20 14:40	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*115%*		*70-130*		*7/23/20 14:40*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*88.1%*		*70-130*		*7/23/20 14:40*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*106%*		*70-130*		*7/23/20 14:40*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-B43-071520
Lab/Sample Number: MAG0582-26 Collect Date: 07/15/20 10:30
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS								
Dissolved Silver	ND	mg/L	0.000100	0.00100	8/4/20 12:56	MYM	EPA 200.8	
Dissolved Arsenic	0.00316	mg/L	0.0000850	0.00100	8/4/20 12:56	MYM	EPA 200.8	
Dissolved Barium	0.00310	mg/L	0.000157	0.00100	8/4/20 12:56	MYM	EPA 200.8	
Dissolved Cadmium	ND	mg/L	0.0000670	0.00100	8/4/20 12:56	MYM	EPA 200.8	
Dissolved Chromium	ND	mg/L	0.0000900	0.00100	8/4/20 12:56	MYM	EPA 200.8	
Dissolved Mercury-Icpms	ND	mg/L	0.000100	0.000100	8/4/20 12:56	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.0000660	0.00100	8/4/20 12:56	MYM	EPA 200.8	
Dissolved Selenium	ND	mg/L	0.000290	0.00100	8/4/20 12:56	MYM	EPA 200.8	
Mercury								
Mercury	ND	ug/L	0.00200	0.0100	7/28/20 16:20	TEC	EPA 245.7	
Semivolatiles								
1-Methylnaphthalene	0.121	ug/L	0.0250	0.0500	7/24/20 21:53	TGT	EPA 8270D	
2-Methylnaphthalene	ND	ug/L	0.0250	0.0500	7/24/20 21:53	TGT	EPA 8270D	
Acenaphthene	ND	ug/L	0.0250	0.0500	7/24/20 21:53	TGT	EPA 8270D	
Acenaphthylene	ND	ug/L	0.0250	0.0500	7/24/20 21:53	TGT	EPA 8270D	
Anthracene	ND	ug/L	0.0250	0.0500	7/24/20 21:53	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	ug/L	0.0250	0.0500	7/24/20 21:53	TGT	EPA 8270D	
Benzo[a]anthracene	ND	ug/L	0.0250	0.0500	7/24/20 21:53	TGT	EPA 8270D	
Benzo[a]pyrene	ND	ug/L	0.0250	0.0500	7/24/20 21:53	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 21:53	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 21:53	TGT	EPA 8270D	
Chrysene	ND	ug/L	0.0250	0.0500	7/24/20 21:53	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	ug/L	0.0250	0.0500	7/24/20 21:53	TGT	EPA 8270D	
Fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 21:53	TGT	EPA 8270D	
Fluorene	ND	ug/L	0.0250	0.0500	7/24/20 21:53	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.0250	0.0500	7/24/20 21:53	TGT	EPA 8270D	
Naphthalene	0.102	ug/L	0.0250	0.0500	7/24/20 21:53	TGT	EPA 8270D	
Phenanthrene	ND	ug/L	0.0250	0.0500	7/24/20 21:53	TGT	EPA 8270D	
Pyrene	ND	ug/L	0.0250	0.0500	7/24/20 21:53	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*102%*		*65-135*		*7/24/20 21:53*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/L	0.294	0.368	7/28/20 17:47	taz	NWTPH-Dx	
Lube Oil	ND	mg/L	0.368	0.735	7/28/20 17:47	taz	NWTPH-Dx	
Surrogate: Hexacosane	*105%*		*50-150*		*7/28/20 17:47*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/L	0.100	0.200	7/23/20 19:46	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*89.6%*		*70-130*		*7/23/20 19:46*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: GW-B43-071520
Lab/Sample Number: MAG0582-26 Collect Date: 07/15/20 10:30
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
2-hexanone	ND	ug/L	0.500	2.50	7/23/20 19:46	TEC	EPA 8260C	
Acetone	9.00	ug/L	0.500	2.50	7/23/20 19:46	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Benzene	3.40	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
DBCP	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
EDB	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Ethylbenzene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-B43-071520

Lab/Sample Number: MAG0582-26 Collect Date: 07/15/20 10:30

Date Received: 07/16/20 14:04 Collected By:

Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Isopropylbenzene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	3.71	ug/L	0.500	2.50	7/23/20 19:46	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	0.500	2.50	7/23/20 19:46	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	0.500	2.50	7/23/20 19:46	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Naphthalene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
n-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
n-Propylbenzene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
sec-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Styrene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Toluene	0.580	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.100	0.500	7/23/20 19:46	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*115%*		*70-130*		*7/23/20 19:46*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*86.7%*		*70-130*		*7/23/20 19:46*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*93.4%*		*70-130*		*7/23/20 19:46*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-B42-4-6-071420

Lab/Sample Number: MAG0582-27 Collect Date: 07/14/20 11:15

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	84.9	%	0.100	0.100	7/30/20 9:24	JBM	SM 2540 G	
Metals by ICP-MS								
Silver	ND	mg/kg dry	0.00349	0.612	8/4/20 22:31	MYM	EPA 6020B	
Arsenic	2.79	mg/kg dry	0.0306	0.0612	8/6/20 20:17	MYM	EPA 6020B	
Barium	67.5	mg/kg dry	0.00612	0.612	8/6/20 20:17	MYM	EPA 6020B	
Cadmium	ND	mg/kg dry	0.00612	0.612	8/4/20 22:31	MYM	EPA 6020B	
Chromium	23.1	mg/kg dry	0.00306	0.612	8/6/20 20:17	MYM	EPA 6020B	
Mercury	0.0239	mg/kg dry	0.000612	0.00612	8/4/20 22:31	MYM	EPA 6020B	
Lead	2.84	mg/kg dry	0.0306	0.612	8/4/20 22:31	MYM	EPA 6020B	
Selenium	ND	mg/kg dry	0.00361	0.612	8/6/20 20:17	MYM	EPA 6020B	
Semivolatiles								
1-Methylnaphthalene	ND	mg/kg dry	0.00575	0.0115	8/4/20 20:27	TGT	EPA 8270D	
2-Methylnaphthalene	ND	mg/kg dry	0.00575	0.0115	8/4/20 20:27	TGT	EPA 8270D	
Acenaphthene	ND	mg/kg dry	0.00575	0.0115	8/4/20 20:27	TGT	EPA 8270D	
Acenaphthylene	ND	mg/kg dry	0.00575	0.0115	8/4/20 20:27	TGT	EPA 8270D	
Anthracene	ND	mg/kg dry	0.00575	0.0115	8/4/20 20:27	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	mg/kg dry	0.00575	0.0115	8/4/20 20:27	TGT	EPA 8270D	
Benzo[a]anthracene	ND	mg/kg dry	0.00575	0.0115	8/4/20 20:27	TGT	EPA 8270D	
Benzo[a]pyrene	ND	mg/kg dry	0.00575	0.0115	8/4/20 20:27	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	mg/kg dry	0.00575	0.0115	8/4/20 20:27	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	mg/kg dry	0.00575	0.0115	8/4/20 20:27	TGT	EPA 8270D	
Chrysene	ND	mg/kg dry	0.00575	0.0115	8/4/20 20:27	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	mg/kg dry	0.00575	0.0115	8/4/20 20:27	TGT	EPA 8270D	
Fluoranthene	ND	mg/kg dry	0.00575	0.0115	8/4/20 20:27	TGT	EPA 8270D	
Fluorene	ND	mg/kg dry	0.00575	0.0115	8/4/20 20:27	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	mg/kg dry	0.00575	0.0115	8/4/20 20:27	TGT	EPA 8270D	
Naphthalene	ND	mg/kg dry	0.00575	0.0115	8/4/20 20:27	TGT	EPA 8270D	
Phenanthrene	ND	mg/kg dry	0.00575	0.0115	8/4/20 20:27	TGT	EPA 8270D	
Pyrene	ND	mg/kg dry	0.00575	0.0115	8/4/20 20:27	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*76.7%*		*60-130*		*8/4/20 20:27*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/kg dry	12.7	31.7	7/29/20 13:30	taz	NWTPH-Dx	
Lube Oil	ND	mg/kg dry	63.4	127	7/29/20 13:30	taz	NWTPH-Dx	
Surrogate: Hexacosane	*92.4%*		*50-150*		*7/29/20 13:30*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/kg dry	7.55	15.1	7/24/20 18:04	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*94.0%*		*70-130*		*7/24/20 18:04*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: S-B42-4-6-071420
Lab/Sample Number: MAG0582-27 Collect Date: 07/14/20 11:15
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00378	0.0944	7/24/20 18:04	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0378	0.0944	7/24/20 18:04	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Chloroform	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Ethylbenzene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-B42-4-6-071420

Lab/Sample Number: MAG0582-27 Collect Date: 07/14/20 11:15

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Isopropylbenzene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0378	0.0944	7/24/20 18:04	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0378	0.0944	7/24/20 18:04	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0378	0.0944	7/24/20 18:04	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Naphthalene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
n-Butylbenzene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
n-Propylbenzene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.00755	0.0189	7/24/20 18:04	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*116%*		*70-130*		*7/24/20 18:04*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*85.7%*		*70-130*		*7/24/20 18:04*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*95.8%*		*70-130*		*7/24/20 18:04*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-B44-6-11-071420

Lab/Sample Number: MAG0582-28 Collect Date: 07/14/20 14:00

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	77.3	%	0.100	0.100	7/30/20 9:24	JBM	SM 2540 G	
Metals by ICP-MS								
Silver	ND	mg/kg dry	0.00390	0.684	8/4/20 22:37	MYM	EPA 6020B	
Arsenic	1.47	mg/kg dry	0.0342	0.0684	8/6/20 20:24	MYM	EPA 6020B	
Barium	37.4	mg/kg dry	0.00684	0.684	8/6/20 20:24	MYM	EPA 6020B	
Cadmium	ND	mg/kg dry	0.00684	0.684	8/4/20 22:37	MYM	EPA 6020B	
Chromium	14.8	mg/kg dry	0.00342	0.684	8/6/20 20:24	MYM	EPA 6020B	
Mercury	0.0137	mg/kg dry	0.000684	0.00684	8/4/20 22:37	MYM	EPA 6020B	
Lead	1.64	mg/kg dry	0.0342	0.684	8/4/20 22:37	MYM	EPA 6020B	
Selenium	ND	mg/kg dry	0.00404	0.684	8/6/20 20:24	MYM	EPA 6020B	
Semivolatiles								
1-Methylnaphthalene	ND	mg/kg dry	0.00637	0.0127	8/4/20 20:51	TGT	EPA 8270D	
2-Methylnaphthalene	ND	mg/kg dry	0.00637	0.0127	8/4/20 20:51	TGT	EPA 8270D	
Acenaphthene	ND	mg/kg dry	0.00637	0.0127	8/4/20 20:51	TGT	EPA 8270D	
Acenaphthylene	ND	mg/kg dry	0.00637	0.0127	8/4/20 20:51	TGT	EPA 8270D	
Anthracene	ND	mg/kg dry	0.00637	0.0127	8/4/20 20:51	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	mg/kg dry	0.00637	0.0127	8/4/20 20:51	TGT	EPA 8270D	
Benzo[a]anthracene	ND	mg/kg dry	0.00637	0.0127	8/4/20 20:51	TGT	EPA 8270D	
Benzo[a]pyrene	ND	mg/kg dry	0.00637	0.0127	8/4/20 20:51	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	mg/kg dry	0.00637	0.0127	8/4/20 20:51	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	mg/kg dry	0.00637	0.0127	8/4/20 20:51	TGT	EPA 8270D	
Chrysene	ND	mg/kg dry	0.00637	0.0127	8/4/20 20:51	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	mg/kg dry	0.00637	0.0127	8/4/20 20:51	TGT	EPA 8270D	
Fluoranthene	ND	mg/kg dry	0.00637	0.0127	8/4/20 20:51	TGT	EPA 8270D	
Fluorene	ND	mg/kg dry	0.00637	0.0127	8/4/20 20:51	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	mg/kg dry	0.00637	0.0127	8/4/20 20:51	TGT	EPA 8270D	
Naphthalene	ND	mg/kg dry	0.00637	0.0127	8/4/20 20:51	TGT	EPA 8270D	
Phenanthrene	ND	mg/kg dry	0.00637	0.0127	8/4/20 20:51	TGT	EPA 8270D	
Pyrene	ND	mg/kg dry	0.00637	0.0127	8/4/20 20:51	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*74.9%*		*60-130*		*8/4/20 20:51*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/kg dry	12.7	31.8	7/29/20 14:05	taz	NWTPH-Dx	
Lube Oil	ND	mg/kg dry	63.6	127	7/29/20 14:05	taz	NWTPH-Dx	
Surrogate: Hexacosane	*84.9%*		*50-150*		*7/29/20 14:05*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/kg dry	8.69	17.4	7/24/20 18:34	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*92.0%*		*70-130*		*7/24/20 18:34*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: S-B44-6-11-071420
Lab/Sample Number: MAG0582-28 Collect Date: 07/14/20 14:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00434	0.109	7/24/20 18:34	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0434	0.109	7/24/20 18:34	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Chloroform	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Ethylbenzene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-B44-6-11-071420
Lab/Sample Number: MAG0582-28 Collect Date: 07/14/20 14:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Isopropylbenzene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0434	0.109	7/24/20 18:34	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0434	0.109	7/24/20 18:34	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0434	0.109	7/24/20 18:34	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Naphthalene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
n-Butylbenzene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
n-Propylbenzene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.00869	0.0217	7/24/20 18:34	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*118%*		*70-130*		*7/24/20 18:34*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*85.7%*		*70-130*		*7/24/20 18:34*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*105%*		*70-130*		*7/24/20 18:34*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: S-B45-8-10-071420

Lab/Sample Number: MAG0582-29 Collect Date: 07/14/20 15:00

Date Received: 07/16/20 14:04 Collected By:

Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics								
% Solids	68.6	%	0.100	0.100	7/30/20 9:24	JBM	SM 2540 G	
Metals by ICP-MS								
Silver	ND	mg/kg dry	0.00420	0.736	8/4/20 22:44	MYM	EPA 6020B	
Arsenic	4.01	mg/kg dry	0.0368	0.0736	8/6/20 20:30	MYM	EPA 6020B	
Barium	53.1	mg/kg dry	0.00736	0.736	8/6/20 20:30	MYM	EPA 6020B	
Cadmium	ND	mg/kg dry	0.00736	0.736	8/4/20 22:44	MYM	EPA 6020B	
Chromium	20.2	mg/kg dry	0.00368	0.736	8/6/20 20:30	MYM	EPA 6020B	
Mercury	0.0471	mg/kg dry	0.000736	0.00736	8/4/20 22:44	MYM	EPA 6020B	
Lead	2.44	mg/kg dry	0.0368	0.736	8/4/20 22:44	MYM	EPA 6020B	
Selenium	ND	mg/kg dry	0.00434	0.736	8/6/20 20:30	MYM	EPA 6020B	
Semivolatiles								
1-Methylnaphthalene	ND	mg/kg dry	0.00729	0.0146	8/4/20 21:14	TGT	EPA 8270D	
2-Methylnaphthalene	ND	mg/kg dry	0.00729	0.0146	8/4/20 21:14	TGT	EPA 8270D	
Acenaphthene	ND	mg/kg dry	0.00729	0.0146	8/4/20 21:14	TGT	EPA 8270D	
Acenaphthylene	ND	mg/kg dry	0.00729	0.0146	8/4/20 21:14	TGT	EPA 8270D	
Anthracene	ND	mg/kg dry	0.00729	0.0146	8/4/20 21:14	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	mg/kg dry	0.00729	0.0146	8/4/20 21:14	TGT	EPA 8270D	
Benzo[a]anthracene	ND	mg/kg dry	0.00729	0.0146	8/4/20 21:14	TGT	EPA 8270D	
Benzo[a]pyrene	ND	mg/kg dry	0.00729	0.0146	8/4/20 21:14	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	mg/kg dry	0.00729	0.0146	8/4/20 21:14	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	mg/kg dry	0.00729	0.0146	8/4/20 21:14	TGT	EPA 8270D	
Chrysene	ND	mg/kg dry	0.00729	0.0146	8/4/20 21:14	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	mg/kg dry	0.00729	0.0146	8/4/20 21:14	TGT	EPA 8270D	
Fluoranthene	ND	mg/kg dry	0.00729	0.0146	8/4/20 21:14	TGT	EPA 8270D	
Fluorene	ND	mg/kg dry	0.00729	0.0146	8/4/20 21:14	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	mg/kg dry	0.00729	0.0146	8/4/20 21:14	TGT	EPA 8270D	
Naphthalene	ND	mg/kg dry	0.00729	0.0146	8/4/20 21:14	TGT	EPA 8270D	
Phenanthrene	ND	mg/kg dry	0.00729	0.0146	8/4/20 21:14	TGT	EPA 8270D	
Pyrene	ND	mg/kg dry	0.00729	0.0146	8/4/20 21:14	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*72.5%*		*60-130*		*8/4/20 21:14*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/kg dry	12.8	31.9	7/29/20 14:40	taz	NWTPH-Dx	
Lube Oil	ND	mg/kg dry	63.8	128	7/29/20 14:40	taz	NWTPH-Dx	
Surrogate: Hexacosane	*84.6%*		*50-150*		*7/29/20 14:40*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/kg dry	8.78	17.6	7/24/20 19:04	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*91.6%*		*70-130*		*7/24/20 19:04*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: S-B45-8-10-071420
Lab/Sample Number: MAG0582-29 Collect Date: 07/14/20 15:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
1,1-Dichloroethane	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
1,1-Dichloropropene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
1,2-Dichloroethane	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
1,2-Dichloropropane	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
1,3-Dichloropropane	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
2,2-Dichloropropane	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
2-hexanone	ND	mg/kg dry	0.00439	0.110	7/24/20 19:04	TEC	EPA 8260C	
Acetone	ND	mg/kg dry	0.0439	0.110	7/24/20 19:04	TEC	EPA 8260C	
Acrylonitrile	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Benzene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Bromobenzene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Bromochloromethane	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Bromodichloromethane	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Bromoform	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Bromomethane	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Carbon disulfide	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Carbon Tetrachloride	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Chloroethane	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Chloroform	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Chloromethane	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
DBCP	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Dibromochloromethane	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Dibromomethane	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
EDB	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Ethylbenzene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: S-B45-8-10-071420
Lab/Sample Number: MAG0582-29 Collect Date: 07/14/20 15:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Solid

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Isopropylbenzene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
m-Dichlorobenzene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	mg/kg dry	0.0439	0.110	7/24/20 19:04	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	mg/kg dry	0.0439	0.110	7/24/20 19:04	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	mg/kg dry	0.0439	0.110	7/24/20 19:04	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Naphthalene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
n-Butylbenzene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
n-Propylbenzene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
o-Chlorotoluene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
p-Chlorotoluene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
p-isopropyltoluene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
sec-Butylbenzene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Styrene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
tert-Butylbenzene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Tetrachloroethylene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Toluene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Trichloroethene	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Trichloroflouromethane	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Vinyl Chloride	ND	mg/kg dry	0.00878	0.0219	7/24/20 19:04	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*120%*		*70-130*		*7/24/20 19:04*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*85.8%*		*70-130*		*7/24/20 19:04*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*100%*		*70-130*		*7/24/20 19:04*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-B32-071420

Lab/Sample Number: MAG0582-30 Collect Date: 07/14/20 14:30

Date Received: 07/16/20 14:04 Collected By:

Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS								
Dissolved Silver	ND	mg/L	0.000100	0.00100	8/4/20 13:03	MYM	EPA 200.8	
Dissolved Arsenic	0.0111	mg/L	0.0000850	0.00100	8/4/20 13:03	MYM	EPA 200.8	
Dissolved Barium	0.0216	mg/L	0.000157	0.00100	8/4/20 13:03	MYM	EPA 200.8	
Dissolved Cadmium	ND	mg/L	0.0000670	0.00100	8/4/20 13:03	MYM	EPA 200.8	
Dissolved Chromium	0.00572	mg/L	0.0000900	0.00100	8/4/20 13:03	MYM	EPA 200.8	
Dissolved Mercury-Icpms	ND	mg/L	0.000100	0.000100	8/4/20 13:03	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.0000660	0.00100	8/4/20 13:03	MYM	EPA 200.8	
Dissolved Selenium	0.00164	mg/L	0.000290	0.00100	8/4/20 13:03	MYM	EPA 200.8	
Mercury								
Mercury	ND	ug/L	0.00200	0.0100	7/28/20 16:27	TEC	EPA 245.7	
Semivolatiles								
1-Methylnaphthalene	ND	ug/L	0.0250	0.0500	7/24/20 22:16	TGT	EPA 8270D	
2-Methylnaphthalene	ND	ug/L	0.0250	0.0500	7/24/20 22:16	TGT	EPA 8270D	
Acenaphthene	ND	ug/L	0.0250	0.0500	7/24/20 22:16	TGT	EPA 8270D	
Acenaphthylene	ND	ug/L	0.0250	0.0500	7/24/20 22:16	TGT	EPA 8270D	
Anthracene	ND	ug/L	0.0250	0.0500	7/24/20 22:16	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	ug/L	0.0250	0.0500	7/24/20 22:16	TGT	EPA 8270D	
Benzo[a]anthracene	ND	ug/L	0.0250	0.0500	7/24/20 22:16	TGT	EPA 8270D	
Benzo[a]pyrene	ND	ug/L	0.0250	0.0500	7/24/20 22:16	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 22:16	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 22:16	TGT	EPA 8270D	
Chrysene	ND	ug/L	0.0250	0.0500	7/24/20 22:16	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	ug/L	0.0250	0.0500	7/24/20 22:16	TGT	EPA 8270D	
Fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 22:16	TGT	EPA 8270D	
Fluorene	ND	ug/L	0.0250	0.0500	7/24/20 22:16	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.0250	0.0500	7/24/20 22:16	TGT	EPA 8270D	
Naphthalene	ND	ug/L	0.0250	0.0500	7/24/20 22:16	TGT	EPA 8270D	
Phenanthrene	ND	ug/L	0.0250	0.0500	7/24/20 22:16	TGT	EPA 8270D	
Pyrene	ND	ug/L	0.0250	0.0500	7/24/20 22:16	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*116%*		*65-135*		*7/24/20 22:16*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/L	0.184	0.230	7/28/20 18:22	taz	NWTPH-Dx	
Lube Oil	ND	mg/L	0.230	0.461	7/28/20 18:22	taz	NWTPH-Dx	J
Surrogate: Hexacosane	*94.7%*		*50-150*		*7/28/20 18:22*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/L	0.100	0.200	7/23/20 15:49	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*89.2%*		*70-130*		*7/23/20 15:49*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: GW-B32-071420
Lab/Sample Number: MAG0582-30 Collect Date: 07/14/20 14:30
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
2-hexanone	ND	ug/L	0.500	2.50	7/23/20 15:49	TEC	EPA 8260C	
Acetone	6.43	ug/L	0.500	2.50	7/23/20 15:49	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Benzene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
DBCP	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
EDB	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Ethylbenzene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-B32-071420

Lab/Sample Number: MAG0582-30 Collect Date: 07/14/20 14:30

Date Received: 07/16/20 14:04 Collected By:

Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Isopropylbenzene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	0.500	2.50	7/23/20 15:49	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	0.500	2.50	7/23/20 15:49	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	0.500	2.50	7/23/20 15:49	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Naphthalene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
n-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
n-Propylbenzene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
sec-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Styrene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Toluene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.100	0.500	7/23/20 15:49	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*117%*		*70-130*		*7/23/20 15:49*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*86.8%*		*70-130*		*7/23/20 15:49*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*103%*		*70-130*		*7/23/20 15:49*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-B32-071420-01
Lab/Sample Number: MAG0582-31 Collect Date: 07/14/20 14:30
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS								
Dissolved Silver	ND	mg/L	0.000100	0.00100	8/4/20 13:09	MYM	EPA 200.8	
Dissolved Arsenic	0.0110	mg/L	0.0000850	0.00100	8/4/20 13:09	MYM	EPA 200.8	
Dissolved Barium	0.0266	mg/L	0.000157	0.00100	8/4/20 13:09	MYM	EPA 200.8	
Dissolved Cadmium	ND	mg/L	0.0000670	0.00100	8/4/20 13:09	MYM	EPA 200.8	
Dissolved Chromium	0.00643	mg/L	0.0000900	0.00100	8/4/20 13:09	MYM	EPA 200.8	
Dissolved Mercury-Icpms	ND	mg/L	0.000100	0.000100	8/4/20 13:09	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.0000660	0.00100	8/4/20 13:09	MYM	EPA 200.8	
Dissolved Selenium	0.00245	mg/L	0.000290	0.00100	8/4/20 13:09	MYM	EPA 200.8	
Mercury								
Mercury	ND	ug/L	0.00200	0.0100	7/29/20 13:46	BSM	EPA 245.7	
Semivolatiles								
1-Methylnaphthalene	ND	ug/L	0.0250	0.0500	7/24/20 22:39	TGT	EPA 8270D	
2-Methylnaphthalene	ND	ug/L	0.0250	0.0500	7/24/20 22:39	TGT	EPA 8270D	
Acenaphthene	ND	ug/L	0.0250	0.0500	7/24/20 22:39	TGT	EPA 8270D	
Acenaphthylene	ND	ug/L	0.0250	0.0500	7/24/20 22:39	TGT	EPA 8270D	
Anthracene	ND	ug/L	0.0250	0.0500	7/24/20 22:39	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	ug/L	0.0250	0.0500	7/24/20 22:39	TGT	EPA 8270D	
Benzo[a]anthracene	ND	ug/L	0.0250	0.0500	7/24/20 22:39	TGT	EPA 8270D	
Benzo[a]pyrene	ND	ug/L	0.0250	0.0500	7/24/20 22:39	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 22:39	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 22:39	TGT	EPA 8270D	
Chrysene	ND	ug/L	0.0250	0.0500	7/24/20 22:39	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	ug/L	0.0250	0.0500	7/24/20 22:39	TGT	EPA 8270D	
Fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 22:39	TGT	EPA 8270D	
Fluorene	ND	ug/L	0.0250	0.0500	7/24/20 22:39	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.0250	0.0500	7/24/20 22:39	TGT	EPA 8270D	
Naphthalene	ND	ug/L	0.0250	0.0500	7/24/20 22:39	TGT	EPA 8270D	
Phenanthrene	ND	ug/L	0.0250	0.0500	7/24/20 22:39	TGT	EPA 8270D	
Pyrene	ND	ug/L	0.0250	0.0500	7/24/20 22:39	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*95.6%*		*65-135*		*7/24/20 22:39*	*TGT*	*EPA 8270D*	
Diesel	0.191	mg/L	0.106	0.132	7/28/20 18:58	taz	NWTPH-Dx	
Lube Oil	ND	mg/L	0.265	0.529	7/28/20 18:58	taz	NWTPH-Dx	
Surrogate: Hexacosane	*93.7%*		*50-150*		*7/28/20 18:58*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/L	0.100	0.200	7/23/20 20:16	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*87.2%*		*70-130*		*7/23/20 20:16*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: GW-B32-071420-01
Lab/Sample Number: MAG0582-31 Collect Date: 07/14/20 14:30
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
2-hexanone	ND	ug/L	0.500	2.50	7/23/20 20:16	TEC	EPA 8260C	
Acetone	8.31	ug/L	0.500	2.50	7/23/20 20:16	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Benzene	0.510	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
DBCP	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
EDB	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Ethylbenzene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-B32-071420-01
Lab/Sample Number: MAG0582-31 Collect Date: 07/14/20 14:30
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Isopropylbenzene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	0.500	2.50	7/23/20 20:16	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	0.500	2.50	7/23/20 20:16	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	0.500	2.50	7/23/20 20:16	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Naphthalene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
n-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
n-Propylbenzene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
sec-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Styrene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Toluene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.100	0.500	7/23/20 20:16	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*117%*		*70-130*		*7/23/20 20:16*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*85.6%*		*70-130*		*7/23/20 20:16*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*94.5%*		*70-130*		*7/23/20 20:16*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-B33-071420
Lab/Sample Number: MAG0582-32 Collect Date: 07/14/20 13:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS								
Dissolved Silver	ND	mg/L	0.000100	0.00100	8/4/20 13:16	MYM	EPA 200.8	
Dissolved Arsenic	ND	mg/L	0.0000850	0.00100	8/4/20 13:16	MYM	EPA 200.8	
Dissolved Barium	0.0103	mg/L	0.000157	0.00100	8/4/20 13:16	MYM	EPA 200.8	
Dissolved Cadmium	ND	mg/L	0.0000670	0.00100	8/4/20 13:16	MYM	EPA 200.8	
Dissolved Chromium	ND	mg/L	0.0000900	0.00100	8/4/20 13:16	MYM	EPA 200.8	
Dissolved Mercury-Icpms	ND	mg/L	0.000100	0.000100	8/4/20 13:16	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.0000660	0.00100	8/4/20 13:16	MYM	EPA 200.8	
Dissolved Selenium	0.00262	mg/L	0.000290	0.00100	8/4/20 13:16	MYM	EPA 200.8	
Mercury								
Mercury	ND	ug/L	0.00200	0.0100	7/29/20 14:09	BSM	EPA 245.7	
Semivolatiles								
1-Methylnaphthalene	0.120	ug/L	0.0250	0.0500	7/24/20 23:03	TGT	EPA 8270D	
2-Methylnaphthalene	0.0964	ug/L	0.0250	0.0500	7/24/20 23:03	TGT	EPA 8270D	
Acenaphthene	ND	ug/L	0.0250	0.0500	7/24/20 23:03	TGT	EPA 8270D	
Acenaphthylene	ND	ug/L	0.0250	0.0500	7/24/20 23:03	TGT	EPA 8270D	
Anthracene	ND	ug/L	0.0250	0.0500	7/24/20 23:03	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	ug/L	0.0250	0.0500	7/24/20 23:03	TGT	EPA 8270D	
Benzo[a]anthracene	ND	ug/L	0.0250	0.0500	7/24/20 23:03	TGT	EPA 8270D	
Benzo[a]pyrene	ND	ug/L	0.0250	0.0500	7/24/20 23:03	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 23:03	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 23:03	TGT	EPA 8270D	
Chrysene	ND	ug/L	0.0250	0.0500	7/24/20 23:03	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	ug/L	0.0250	0.0500	7/24/20 23:03	TGT	EPA 8270D	
Fluoranthene	ND	ug/L	0.0250	0.0500	7/24/20 23:03	TGT	EPA 8270D	
Fluorene	ND	ug/L	0.0250	0.0500	7/24/20 23:03	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.0250	0.0500	7/24/20 23:03	TGT	EPA 8270D	
Naphthalene	ND	ug/L	0.0250	0.0500	7/24/20 23:03	TGT	EPA 8270D	
Phenanthrene	0.408	ug/L	0.0250	0.0500	7/24/20 23:03	TGT	EPA 8270D	
Pyrene	0.348	ug/L	0.0250	0.0500	7/24/20 23:03	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*102%*		*65-135*		*7/24/20 23:03*	*TGT*	*EPA 8270D*	
Volatiles								
Gasoline	ND	mg/L	0.100	0.200	7/23/20 20:46	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*86.4%*		*70-130*		*7/23/20 20:46*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-B33-071420
Lab/Sample Number: MAG0582-32 Collect Date: 07/14/20 13:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1-Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
2-hexanone	ND	ug/L	0.500	2.50	7/23/20 20:46	TEC	EPA 8260C	
Acetone	5.12	ug/L	0.500	2.50	7/23/20 20:46	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Benzene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
DBCP	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
EDB	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Ethylbenzene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Hexachlorobutadiene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Isopropylbenzene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	0.500	2.50	7/23/20 20:46	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-B33-071420
Lab/Sample Number: MAG0582-32 Collect Date: 07/14/20 13:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Methyl isobutyl ketone (MIBK)	ND	ug/L	0.500	2.50	7/23/20 20:46	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	0.500	2.50	7/23/20 20:46	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Naphthalene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
n-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
n-Propylbenzene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
sec-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Styrene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Toluene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.100	0.500	7/23/20 20:46	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*120%*		*70-130*		*7/23/20 20:46*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*82.7%*		*70-130*		*7/23/20 20:46*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*112%*		*70-130*		*7/23/20 20:46*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-B34-071420
Lab/Sample Number: MAG0582-33 Collect Date: 07/14/20 09:30
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Semivolatiles								
1-Methylnaphthalene	0.0216	ug/L	0.00500	0.0100	7/24/20 23:26	TGT	EPA 8270D	
2-Methylnaphthalene	0.0142	ug/L	0.00500	0.0100	7/24/20 23:26	TGT	EPA 8270D	
Acenaphthene	ND	ug/L	0.00500	0.0100	7/24/20 23:26	TGT	EPA 8270D	
Acenaphthylene	ND	ug/L	0.00500	0.0100	7/24/20 23:26	TGT	EPA 8270D	
Anthracene	ND	ug/L	0.00500	0.0100	7/24/20 23:26	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	ug/L	0.00500	0.0100	7/24/20 23:26	TGT	EPA 8270D	
Benzo[a]anthracene	ND	ug/L	0.00500	0.0100	7/24/20 23:26	TGT	EPA 8270D	
Benzo[a]pyrene	ND	ug/L	0.00500	0.0100	7/24/20 23:26	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	ug/L	0.00500	0.0100	7/24/20 23:26	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	ug/L	0.00500	0.0100	7/24/20 23:26	TGT	EPA 8270D	
Chrysene	ND	ug/L	0.00500	0.0100	7/24/20 23:26	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	ug/L	0.00500	0.0100	7/24/20 23:26	TGT	EPA 8270D	
Fluoranthene	ND	ug/L	0.00500	0.0100	7/24/20 23:26	TGT	EPA 8270D	
Fluorene	ND	ug/L	0.00500	0.0100	7/24/20 23:26	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.00500	0.0100	7/24/20 23:26	TGT	EPA 8270D	
Naphthalene	0.0346	ug/L	0.00500	0.0100	7/24/20 23:26	TGT	EPA 8270D	
Phenanthrene	ND	ug/L	0.00500	0.0100	7/24/20 23:26	TGT	EPA 8270D	
Pyrene	ND	ug/L	0.00500	0.0100	7/24/20 23:26	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*109%*		*65-135*		*7/24/20 23:26*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/L	0.111	0.139	7/28/20 19:33	taz	NWTPH-Dx	
Lube Oil	ND	mg/L	0.277	0.554	7/28/20 19:33	taz	NWTPH-Dx	
Surrogate: Hexacosane	*99.6%*		*50-150*		*7/28/20 19:33*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/L	0.100	0.200	7/23/20 17:18	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*87.2%*		*70-130*		*7/23/20 17:18*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-B34-071420
Lab/Sample Number: MAG0582-33 Collect Date: 07/14/20 09:30
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,2-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
2-hexanone	ND	ug/L	0.500	2.50	7/23/20 17:18	TEC	EPA 8260C	
Acetone	ND	ug/L	0.500	2.50	7/23/20 17:18	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Benzene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
DBCP	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
EDB	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Ethylbenzene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Hexachlorobutadiene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Isopropylbenzene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
m-Dichlorobenzene	0.890	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	0.500	2.50	7/23/20 17:18	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	0.500	2.50	7/23/20 17:18	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	0.500	2.50	7/23/20 17:18	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Naphthalene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
n-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
n-Propylbenzene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-B34-071420
Lab/Sample Number: MAG0582-33 Collect Date: 07/14/20 09:30
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
o-Xylene (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
sec-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Styrene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Toluene	0.770	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.100	0.500	7/23/20 17:18	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*119%*		*70-130*		*7/23/20 17:18*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*83.8%*		*70-130*		*7/23/20 17:18*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*118%*		*70-130*		*7/23/20 17:18*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-B35-071420
Lab/Sample Number: MAG0582-34 Collect Date: 07/14/20 10:30
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS								
Dissolved Silver	ND	mg/L	0.000100	0.00100	8/4/20 13:22	MYM	EPA 200.8	
Dissolved Arsenic	ND	mg/L	0.0000850	0.00100	8/4/20 13:22	MYM	EPA 200.8	
Dissolved Barium	0.0206	mg/L	0.000157	0.00100	8/4/20 13:22	MYM	EPA 200.8	
Dissolved Cadmium	ND	mg/L	0.0000670	0.00100	8/4/20 13:22	MYM	EPA 200.8	
Dissolved Chromium	ND	mg/L	0.0000900	0.00100	8/4/20 13:22	MYM	EPA 200.8	
Dissolved Mercury-Icpms	ND	mg/L	0.000100	0.000100	8/4/20 13:22	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.0000660	0.00100	8/4/20 13:22	MYM	EPA 200.8	
Dissolved Selenium	0.00541	mg/L	0.000290	0.00100	8/4/20 13:22	MYM	EPA 200.8	
Mercury								
Mercury	ND	ug/L	0.00200	0.0100	7/29/20 14:17	BSM	EPA 245.7	
Semivolatiles								
1-Methylnaphthalene	0.0230	ug/L	0.00500	0.0100	7/24/20 23:50	TGT	EPA 8270D	
2-Methylnaphthalene	0.0126	ug/L	0.00500	0.0100	7/24/20 23:50	TGT	EPA 8270D	
Acenaphthene	ND	ug/L	0.00500	0.0100	7/24/20 23:50	TGT	EPA 8270D	
Acenaphthylene	ND	ug/L	0.00500	0.0100	7/24/20 23:50	TGT	EPA 8270D	
Anthracene	ND	ug/L	0.00500	0.0100	7/24/20 23:50	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	ug/L	0.00500	0.0100	7/24/20 23:50	TGT	EPA 8270D	
Benzo[a]anthracene	ND	ug/L	0.00500	0.0100	7/24/20 23:50	TGT	EPA 8270D	
Benzo[a]pyrene	ND	ug/L	0.00500	0.0100	7/24/20 23:50	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	ug/L	0.00500	0.0100	7/24/20 23:50	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	ug/L	0.00500	0.0100	7/24/20 23:50	TGT	EPA 8270D	
Chrysene	ND	ug/L	0.00500	0.0100	7/24/20 23:50	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	ug/L	0.00500	0.0100	7/24/20 23:50	TGT	EPA 8270D	
Fluoranthene	ND	ug/L	0.00500	0.0100	7/24/20 23:50	TGT	EPA 8270D	
Fluorene	ND	ug/L	0.00500	0.0100	7/24/20 23:50	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.00500	0.0100	7/24/20 23:50	TGT	EPA 8270D	
Naphthalene	0.0325	ug/L	0.00500	0.0100	7/24/20 23:50	TGT	EPA 8270D	
Phenanthrene	ND	ug/L	0.00500	0.0100	7/24/20 23:50	TGT	EPA 8270D	
Pyrene	ND	ug/L	0.00500	0.0100	7/24/20 23:50	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*101%*		*65-135*		*7/24/20 23:50*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/L	0.215	0.269	7/28/20 20:08	taz	NWTPH-Dx	
Lube Oil	ND	mg/L	0.269	0.538	7/28/20 20:08	taz	NWTPH-Dx	
Surrogate: Hexacosane	*102%*		*50-150*		*7/28/20 20:08*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/L	0.100	0.200	7/24/20 0:42	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*92.0%*		*70-130*		*7/24/20 0:42*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: GW-B35-071420
Lab/Sample Number: MAG0582-34 Collect Date: 07/14/20 10:30
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
2-hexanone	ND	ug/L	0.500	2.50	7/24/20 0:42	TEC	EPA 8260C	
Acetone	ND	ug/L	0.500	2.50	7/24/20 0:42	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Benzene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
DBCP	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
EDB	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Ethylbenzene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-B35-071420
Lab/Sample Number: MAG0582-34 Collect Date: 07/14/20 10:30
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Isopropylbenzene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	0.500	2.50	7/24/20 0:42	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	0.500	2.50	7/24/20 0:42	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	0.500	2.50	7/24/20 0:42	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Naphthalene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
n-Butylbenzene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
n-Propylbenzene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
sec-Butylbenzene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Styrene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Toluene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.100	0.500	7/24/20 0:42	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*115%*		*70-130*		*7/24/20 0:42*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*89.2%*		*70-130*		*7/24/20 0:42*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*106%*		*70-130*		*7/24/20 0:42*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-B42-071420
Lab/Sample Number: MAG0582-35 Collect Date: 07/14/20 11:45
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS								
Dissolved Silver	ND	mg/L	0.000100	0.00100	8/4/20 13:29	MYM	EPA 200.8	
Dissolved Arsenic	ND	mg/L	0.0000850	0.00100	8/4/20 13:29	MYM	EPA 200.8	
Dissolved Barium	0.0104	mg/L	0.000157	0.00100	8/4/20 13:29	MYM	EPA 200.8	
Dissolved Cadmium	ND	mg/L	0.0000670	0.00100	8/4/20 13:29	MYM	EPA 200.8	
Dissolved Chromium	ND	mg/L	0.0000900	0.00100	8/4/20 13:29	MYM	EPA 200.8	
Dissolved Mercury-Icpms	ND	mg/L	0.000100	0.000100	8/4/20 13:29	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.0000660	0.00100	8/4/20 13:29	MYM	EPA 200.8	
Dissolved Selenium	ND	mg/L	0.000290	0.00100	8/4/20 13:29	MYM	EPA 200.8	
Mercury								
Mercury	0.145	ug/L	0.00200	0.0100	7/29/20 14:24	BSM	EPA 245.7	
Semivolatiles								
1-Methylnaphthalene	ND	ug/L	0.00500	0.0100	7/25/20 0:13	TGT	EPA 8270D	
2-Methylnaphthalene	ND	ug/L	0.00500	0.0100	7/25/20 0:13	TGT	EPA 8270D	
Acenaphthene	ND	ug/L	0.00500	0.0100	7/25/20 0:13	TGT	EPA 8270D	
Acenaphthylene	ND	ug/L	0.00500	0.0100	7/25/20 0:13	TGT	EPA 8270D	
Anthracene	ND	ug/L	0.00500	0.0100	7/25/20 0:13	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	ug/L	0.00500	0.0100	7/25/20 0:13	TGT	EPA 8270D	
Benzo[a]anthracene	ND	ug/L	0.00500	0.0100	7/25/20 0:13	TGT	EPA 8270D	
Benzo[a]pyrene	ND	ug/L	0.00500	0.0100	7/25/20 0:13	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	ug/L	0.00500	0.0100	7/25/20 0:13	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	ug/L	0.00500	0.0100	7/25/20 0:13	TGT	EPA 8270D	
Chrysene	ND	ug/L	0.00500	0.0100	7/25/20 0:13	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	ug/L	0.00500	0.0100	7/25/20 0:13	TGT	EPA 8270D	
Fluoranthene	ND	ug/L	0.00500	0.0100	7/25/20 0:13	TGT	EPA 8270D	
Fluorene	ND	ug/L	0.00500	0.0100	7/25/20 0:13	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.00500	0.0100	7/25/20 0:13	TGT	EPA 8270D	
Naphthalene	0.0135	ug/L	0.00500	0.0100	7/25/20 0:13	TGT	EPA 8270D	
Phenanthrene	ND	ug/L	0.00500	0.0100	7/25/20 0:13	TGT	EPA 8270D	
Pyrene	ND	ug/L	0.00500	0.0100	7/25/20 0:13	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*92.4%*		*65-135*		*7/25/20 0:13*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/L	0.0980	0.196	7/28/20 20:43	taz	NWTPH-Dx	
Lube Oil	ND	mg/L	0.196	0.392	7/28/20 20:43	taz	NWTPH-Dx	
Surrogate: Hexacosane	*96.6%*		*50-150*		*7/28/20 20:43*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/L	0.100	0.200	7/23/20 18:17	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*88.0%*		*70-130*		*7/23/20 18:17*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: GW-B42-071420
Lab/Sample Number: MAG0582-35 Collect Date: 07/14/20 11:45
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
2-hexanone	ND	ug/L	0.500	2.50	7/23/20 18:17	TEC	EPA 8260C	
Acetone	ND	ug/L	0.500	2.50	7/23/20 18:17	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Benzene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
DBCP	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
EDB	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Ethylbenzene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-B42-071420
Lab/Sample Number: MAG0582-35 Collect Date: 07/14/20 11:45
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Isopropylbenzene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	0.500	2.50	7/23/20 18:17	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	0.500	2.50	7/23/20 18:17	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	0.500	2.50	7/23/20 18:17	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Naphthalene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
n-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
n-Propylbenzene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
sec-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Styrene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Toluene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.100	0.500	7/23/20 18:17	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*121%*		*70-130*		*7/23/20 18:17*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*85.0%*		*70-130*		*7/23/20 18:17*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*107%*		*70-130*		*7/23/20 18:17*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-B44-071420
Lab/Sample Number: MAG0582-36 Collect Date: 07/14/20 14:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS								
Dissolved Silver	ND	mg/L	0.000100	0.00100	8/4/20 14:14	MYM	EPA 200.8	
Dissolved Arsenic	ND	mg/L	0.0000850	0.00100	8/4/20 14:14	MYM	EPA 200.8	
Dissolved Barium	0.00610	mg/L	0.000157	0.00100	8/4/20 14:14	MYM	EPA 200.8	
Dissolved Cadmium	ND	mg/L	0.0000670	0.00100	8/4/20 14:14	MYM	EPA 200.8	
Dissolved Chromium	ND	mg/L	0.0000900	0.00100	8/4/20 14:14	MYM	EPA 200.8	
Dissolved Mercury-Icpms	ND	mg/L	0.000100	0.000100	8/4/20 14:14	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.0000660	0.00100	8/4/20 14:14	MYM	EPA 200.8	
Dissolved Selenium	0.00155	mg/L	0.000290	0.00100	8/4/20 14:14	MYM	EPA 200.8	
Mercury								
Mercury	ND	ug/L	0.00200	0.0100	7/29/20 14:32	BSM	EPA 245.7	
Semivolatiles								
1-Methylnaphthalene	ND	ug/L	0.00500	0.0100	7/25/20 0:37	TGT	EPA 8270D	
2-Methylnaphthalene	ND	ug/L	0.00500	0.0100	7/25/20 0:37	TGT	EPA 8270D	
Acenaphthene	ND	ug/L	0.00500	0.0100	7/25/20 0:37	TGT	EPA 8270D	
Acenaphthylene	ND	ug/L	0.00500	0.0100	7/25/20 0:37	TGT	EPA 8270D	
Anthracene	ND	ug/L	0.00500	0.0100	7/25/20 0:37	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	ug/L	0.00500	0.0100	7/25/20 0:37	TGT	EPA 8270D	
Benzo[a]anthracene	ND	ug/L	0.00500	0.0100	7/25/20 0:37	TGT	EPA 8270D	
Benzo[a]pyrene	ND	ug/L	0.00500	0.0100	7/25/20 0:37	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	ug/L	0.00500	0.0100	7/25/20 0:37	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	ug/L	0.00500	0.0100	7/25/20 0:37	TGT	EPA 8270D	
Chrysene	ND	ug/L	0.00500	0.0100	7/25/20 0:37	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	ug/L	0.00500	0.0100	7/25/20 0:37	TGT	EPA 8270D	
Fluoranthene	ND	ug/L	0.00500	0.0100	7/25/20 0:37	TGT	EPA 8270D	
Fluorene	ND	ug/L	0.00500	0.0100	7/25/20 0:37	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.00500	0.0100	7/25/20 0:37	TGT	EPA 8270D	
Naphthalene	ND	ug/L	0.00500	0.0100	7/25/20 0:37	TGT	EPA 8270D	
Phenanthrene	ND	ug/L	0.00500	0.0100	7/25/20 0:37	TGT	EPA 8270D	
Pyrene	ND	ug/L	0.00500	0.0100	7/25/20 0:37	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*102%*		*65-135*		*7/25/20 0:37*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/L	0.178	0.222	7/28/20 21:18	taz	NWTPH-Dx	
Lube Oil	1.95	mg/L	0.222	0.444	7/28/20 21:18	taz	NWTPH-Dx	
Surrogate: Hexacosane	*103%*		*50-150*		*7/28/20 21:18*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/L	0.100	0.200	7/23/20 18:47	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*88.8%*		*70-130*		*7/23/20 18:47*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: GW-B44-071420
Lab/Sample Number: MAG0582-36 Collect Date: 07/14/20 14:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
2-hexanone	ND	ug/L	0.500	2.50	7/23/20 18:47	TEC	EPA 8260C	
Acetone	ND	ug/L	0.500	2.50	7/23/20 18:47	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Benzene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
DBCP	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
EDB	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Ethylbenzene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-B44-071420
Lab/Sample Number: MAG0582-36 Collect Date: 07/14/20 14:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Isopropylbenzene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	0.500	2.50	7/23/20 18:47	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	0.500	2.50	7/23/20 18:47	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	0.500	2.50	7/23/20 18:47	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Naphthalene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
n-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
n-Propylbenzene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
sec-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Styrene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Toluene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.100	0.500	7/23/20 18:47	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*118%*		*70-130*		*7/23/20 18:47*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*85.9%*		*70-130*		*7/23/20 18:47*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*99.6%*		*70-130*		*7/23/20 18:47*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-B45-071420
Lab/Sample Number: MAG0582-37 Collect Date: 07/14/20 15:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS								
Dissolved Silver	ND	mg/L	0.000100	0.00100	8/4/20 14:20	MYM	EPA 200.8	
Dissolved Arsenic	0.00147	mg/L	0.0000850	0.00100	8/4/20 14:20	MYM	EPA 200.8	
Dissolved Barium	0.00745	mg/L	0.000157	0.00100	8/4/20 14:20	MYM	EPA 200.8	
Dissolved Cadmium	ND	mg/L	0.0000670	0.00100	8/4/20 14:20	MYM	EPA 200.8	
Dissolved Chromium	ND	mg/L	0.0000900	0.00100	8/4/20 14:20	MYM	EPA 200.8	
Dissolved Mercury-Icpms	ND	mg/L	0.000100	0.000100	8/4/20 14:20	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.0000660	0.00100	8/4/20 14:20	MYM	EPA 200.8	
Dissolved Selenium	ND	mg/L	0.000290	0.00100	8/4/20 14:20	MYM	EPA 200.8	
Mercury								
Mercury	ND	ug/L	0.00200	0.0100	7/29/20 14:40	BSM	EPA 245.7	
Semivolatiles								
1-Methylnaphthalene	ND	ug/L	0.00500	0.0100	7/25/20 1:00	TGT	EPA 8270D	
2-Methylnaphthalene	ND	ug/L	0.00500	0.0100	7/25/20 1:00	TGT	EPA 8270D	
Acenaphthene	ND	ug/L	0.00500	0.0100	7/25/20 1:00	TGT	EPA 8270D	
Acenaphthylene	ND	ug/L	0.00500	0.0100	7/25/20 1:00	TGT	EPA 8270D	
Anthracene	ND	ug/L	0.00500	0.0100	7/25/20 1:00	TGT	EPA 8270D	
Benzo(g,h,i)perylene	ND	ug/L	0.00500	0.0100	7/25/20 1:00	TGT	EPA 8270D	
Benzo[a]anthracene	ND	ug/L	0.00500	0.0100	7/25/20 1:00	TGT	EPA 8270D	
Benzo[a]pyrene	ND	ug/L	0.00500	0.0100	7/25/20 1:00	TGT	EPA 8270D	
Benzo[b]fluoranthene	ND	ug/L	0.00500	0.0100	7/25/20 1:00	TGT	EPA 8270D	
Benzo[k]fluoranthene	ND	ug/L	0.00500	0.0100	7/25/20 1:00	TGT	EPA 8270D	
Chrysene	ND	ug/L	0.00500	0.0100	7/25/20 1:00	TGT	EPA 8270D	
Dibenz(a,h)anthracene	ND	ug/L	0.00500	0.0100	7/25/20 1:00	TGT	EPA 8270D	
Fluoranthene	ND	ug/L	0.00500	0.0100	7/25/20 1:00	TGT	EPA 8270D	
Fluorene	ND	ug/L	0.00500	0.0100	7/25/20 1:00	TGT	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.00500	0.0100	7/25/20 1:00	TGT	EPA 8270D	
Naphthalene	ND	ug/L	0.00500	0.0100	7/25/20 1:00	TGT	EPA 8270D	
Phenanthrene	ND	ug/L	0.00500	0.0100	7/25/20 1:00	TGT	EPA 8270D	
Pyrene	ND	ug/L	0.00500	0.0100	7/25/20 1:00	TGT	EPA 8270D	
Surrogate: Terphenyl-d14	*102%*		*65-135*		*7/25/20 1:00*	*TGT*	*EPA 8270D*	
Diesel	ND	mg/L	0.162	0.202	7/28/20 21:53	taz	NWTPH-Dx	
Lube Oil	ND	mg/L	0.202	0.405	7/28/20 21:53	taz	NWTPH-Dx	
Surrogate: Hexacosane	*96.6%*		*50-150*		*7/28/20 21:53*	*taz*	*NWTPH-Dx*	
Volatiles								
Gasoline	ND	mg/L	0.100	0.200	7/24/20 1:11	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*90.8%*		*70-130*		*7/24/20 1:11*	*TEC*	*NWTPH-Gx*	

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Analytical Results Report

(Continued)

Sample Location: GW-B45-071420
Lab/Sample Number: MAG0582-37 Collect Date: 07/14/20 15:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
1,1,1,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
2-hexanone	ND	ug/L	0.500	2.50	7/24/20 1:11	TEC	EPA 8260C	
Acetone	ND	ug/L	0.500	2.50	7/24/20 1:11	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Benzene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
DBCP	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
EDB	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Ethylbenzene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-B45-071420
Lab/Sample Number: MAG0582-37 Collect Date: 07/14/20 15:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
Hexachlorobutadiene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Isopropylbenzene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	0.500	2.50	7/24/20 1:11	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	0.500	2.50	7/24/20 1:11	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	0.500	2.50	7/24/20 1:11	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Naphthalene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
n-Butylbenzene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
n-Propylbenzene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
sec-Butylbenzene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Styrene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Toluene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.100	0.500	7/24/20 1:11	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*119%*		*70-130*		*7/24/20 1:11*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*87.2%*		*70-130*		*7/24/20 1:11*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*94.8%*		*70-130*		*7/24/20 1:11*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: TB-071520
Lab/Sample Number: MAG0582-39 Collect Date: 07/15/20 00:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles								
1,1,1,2-Tetrachloroethane	ND	ug/L	0.110	0.500	7/23/20 12:41	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.140	0.500	7/23/20 12:41	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.110	0.500	7/23/20 12:41	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.0800	0.500	7/23/20 12:41	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.140	0.500	7/23/20 12:41	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.130	0.500	7/23/20 12:41	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.140	0.500	7/23/20 12:41	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.120	0.500	7/23/20 12:41	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.220	0.500	7/23/20 12:41	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.110	0.500	7/23/20 12:41	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	ND	ug/L	0.160	0.500	7/23/20 12:41	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.290	0.500	7/23/20 12:41	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.110	0.500	7/23/20 12:41	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.110	0.500	7/23/20 12:41	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	ug/L	0.180	0.500	7/23/20 12:41	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.0600	0.500	7/23/20 12:41	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.110	0.500	7/23/20 12:41	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.110	0.500	7/23/20 12:41	TEC	EPA 8260C	
2-Chloroethyl vinyl ether	ND	ug/L	2.50	2.50	7/23/20 12:41	TEC	EPA 8260C	
2-hexanone	ND	ug/L	0.440	2.50	7/23/20 12:41	TEC	EPA 8260C	
Acetone	ND	ug/L	2.50	2.50	7/23/20 12:41	TEC	EPA 8260C	
Acrolein	ND	ug/L	0.150	2.50	7/23/20 12:41	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.130	2.50	7/23/20 12:41	TEC	EPA 8260C	
Benzene	ND	ug/L	0.100	0.200	7/23/20 12:41	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.0700	0.500	7/23/20 12:41	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.120	0.500	7/23/20 12:41	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.0400	0.200	7/23/20 12:41	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.120	0.500	7/23/20 12:41	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.470	0.500	7/23/20 12:41	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	0.180	2.50	7/23/20 12:41	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.0300	0.200	7/23/20 12:41	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.0800	0.500	7/23/20 12:41	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.270	0.500	7/23/20 12:41	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.0400	0.200	7/23/20 12:41	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.350	0.500	7/23/20 12:41	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.110	0.500	7/23/20 12:41	TEC	EPA 8260C	
cis-1,3-Dichloropropene	ND	ug/L	0.0700	0.200	7/23/20 12:41	TEC	EPA 8260C	
DBCP	ND	ug/L	0.290	0.500	7/23/20 12:41	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.110	0.500	7/23/20 12:41	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.0800	0.500	7/23/20 12:41	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.140	0.500	7/23/20 12:41	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: TB-071520
Lab/Sample Number: MAG0582-39 Collect Date: 07/15/20 00:00
Date Received: 07/16/20 14:04 Collected By:
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)								
EDB	ND	ug/L	0.0400	0.200	7/23/20 12:41	TEC	EPA 8260C	
Ethylbenzene	ND	ug/L	0.120	0.500	7/23/20 12:41	TEC	EPA 8260C	
Hexachlorobutadiene	ND	ug/L	0.160	0.500	7/23/20 12:41	TEC	EPA 8260C	
Iodomethane	ND	ug/L	0.460	0.500	7/23/20 12:41	TEC	EPA 8260C	
Isopropylbenzene	ND	ug/L	0.140	0.500	7/23/20 12:41	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	ND	ug/L	0.300	1.00	7/23/20 12:41	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.100	0.500	7/23/20 12:41	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	0.570	2.50	7/23/20 12:41	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	0.490	2.50	7/23/20 12:41	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	0.440	0.500	7/23/20 12:41	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.0600	0.500	7/23/20 12:41	TEC	EPA 8260C	
Naphthalene	ND	ug/L	0.110	0.500	7/23/20 12:41	TEC	EPA 8260C	
n-Butylbenzene	ND	ug/L	0.160	0.500	7/23/20 12:41	TEC	EPA 8260C	
n-Propylbenzene	ND	ug/L	0.140	0.500	7/23/20 12:41	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.160	0.500	7/23/20 12:41	TEC	EPA 8260C	
o-Xylene (MCL for total)	ND	ug/L	0.150	0.500	7/23/20 12:41	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.130	0.500	7/23/20 12:41	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.110	0.500	7/23/20 12:41	TEC	EPA 8260C	
sec-Butylbenzene	ND	ug/L	0.160	0.500	7/23/20 12:41	TEC	EPA 8260C	
Styrene	ND	ug/L	0.100	0.500	7/23/20 12:41	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.140	0.500	7/23/20 12:41	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.300	0.500	7/23/20 12:41	TEC	EPA 8260C	
Toluene	ND	ug/L	0.0600	0.500	7/23/20 12:41	TEC	EPA 8260C	
Total Xylenes	ND	ug/L	0.100	0.500	7/23/20 12:41	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.120	0.500	7/23/20 12:41	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.0700	0.200	7/23/20 12:41	TEC	EPA 8260C	
trans-1-4-Dichloro-2-butene	ND	ug/L	0.340	0.500	7/23/20 12:41	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.0800	0.500	7/23/20 12:41	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.130	0.500	7/23/20 12:41	TEC	EPA 8260C	
Vinyl acetate	ND	ug/L	0.140	0.500	7/23/20 12:41	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.150	0.200	7/23/20 12:41	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*117%*		*70-130*		*7/23/20 12:41*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*86.0%*		*70-130*		*7/23/20 12:41*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*113%*		*70-130*		*7/23/20 12:41*	*TEC*	*EPA 8260C*	

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Authorized Signature,



Justin Doty For Todd Taruscio, Laboratory Manager

B10	Target analyte detected in method blank at or above the method detection limit, but below the method reporting limit.
J	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
L1	The associated blank spike recovery was above laboratory acceptance limits
M1	Matrix spike recovery was high; the associated blank spike recovery was acceptable. Potential matrix effect
M2	Matrix spike recovery was low; the associated blank spike recovery was acceptable. Potential matrix effect.
M3	Spike recovery value is unusable. Analyte concentration disproportionate to the spike level. Blank spike recovery acceptable.
PQL	Practical Quantitation Limit
ND	Not Detected
MDL	Method Detection Limit
Dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was spiked or duplicated.

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The results reported related only to the samples indicated.

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Quality Control Data

Metals by ICP-MS

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0930 - 3050 Digest										
Blank (BAG0930-BLK1)					Prepared: 7/29/2020 Analyzed: 8/4/2020					
Barium	ND		0.500	mg/kg wet						
Lead	ND		0.500	mg/kg wet						
Mercury	ND		0.0500	mg/kg wet						
Silver	ND		0.500	mg/kg wet						
Chromium	ND		0.500	mg/kg wet						
Cadmium	ND		0.500	mg/kg wet						
LCS (BAG0930-BS1)					Prepared: 7/29/2020 Analyzed: 8/4/2020					
Lead	19.0		0.500	mg/kg wet	20.0		95.0	80-120		
Silver	4.19		0.500	mg/kg wet	5.00		83.9	80-120		
Barium	18.6		0.500	mg/kg wet	20.0		93.1	80-120		
Mercury	0.280		0.0500	mg/kg wet	0.250		112	80-120		
Chromium	19.4		0.500	mg/kg wet	20.0		96.9	80-120		
Matrix Spike (BAG0930-MS1)		**Source: MAG0582-17**			Prepared: 7/29/2020 Analyzed: 8/4/2020					
Lead	35.3		0.737	mg/kg dry	29.5	5.10	102	75-125		
Mercury	0.478		0.0737	mg/kg dry	0.369	0.0347	120	75-125		
Chromium	49.2		0.737	mg/kg dry	29.5	15.2	115	75-125		
Silver	7.85		0.737	mg/kg dry	7.37	0.0410	106	75-125		
Barium	81.5		0.737	mg/kg dry	29.5	46.3	119	75-125		
Matrix Spike Dup (BAG0930-MSD1)		**Source: MAG0582-17**			Prepared: 7/29/2020 Analyzed: 8/4/2020					
Barium	85.4	M1	0.741	mg/kg dry	29.6	46.3	132	75-125	4.67	20
Silver	7.38		0.741	mg/kg dry	7.41	0.0410	99.1	75-125	6.14	20
Lead	42.8	M1	0.741	mg/kg dry	29.6	5.10	127	75-125	19.2	20
Mercury	0.427		0.0741	mg/kg dry	0.370	0.0347	106	75-125	11.4	20
Chromium	45.4		0.741	mg/kg dry	29.6	15.2	102	75-125	8.12	20

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Quality Control Data
(Continued)

Metals by ICP-MS (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0931 - 3050 Digest										
Blank (BAG0931-BLK1)				Prepared: 7/29/2020 Analyzed: 8/4/2020						
Lead	ND		0.500	mg/kg wet						
Mercury	ND		0.00500	mg/kg wet						
Silver	ND		0.500	mg/kg wet						
Cadmium	ND		0.500	mg/kg wet						
LCS (BAG0931-BS1)				Prepared: 7/29/2020 Analyzed: 8/4/2020						
Silver	4.99		0.500	mg/kg wet	5.00		99.7	80-120		
Mercury	0.240		0.00500	mg/kg wet	1.00		24.0	80-120		
Lead	19.3		0.500	mg/kg wet	20.0		96.3	80-120		
Matrix Spike (BAG0931-MS1)		**Source: MAG0794-01**		Prepared: 7/29/2020 Analyzed: 8/4/2020						
Silver	6.57		0.654	mg/kg dry	6.54	0.159	98.0	75-125		
Mercury	0.440		0.00654	mg/kg dry	1.31	0.182	19.7	75-125		
Lead	290		0.654	mg/kg dry	26.1	257	125	75-125		
Matrix Spike Dup (BAG0931-MSD1)		**Source: MAG0794-01**		Prepared: 7/29/2020 Analyzed: 8/4/2020						
Mercury	0.470		0.00654	mg/kg dry	1.31	0.182	22.0	75-125	6.61	20
Silver	6.59		0.654	mg/kg dry	6.54	0.159	98.4	75-125	0.368	20
Lead	320	M3	0.654	mg/kg dry	26.1	257	240	75-125	9.89	20
Batch: BAH0053 - ICP-MS_D										
Blank (BAH0053-BLK1)				Prepared: 8/3/2020 Analyzed: 8/4/2020						
Dissolved Silver	ND		0.00100	mg/L						
Dissolved Barium	ND		0.00100	mg/L						
Dissolved Lead	ND		0.00100	mg/L						
Dissolved Arsenic	ND		0.00100	mg/L						
Dissolved Cadmium	ND		0.00100	mg/L						
Dissolved Chromium	ND		0.00100	mg/L						
Dissolved Mercury-Icpms	ND		0.000100	mg/L						
Dissolved Selenium	ND		0.00100	mg/L						

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Quality Control Data
(Continued)

Metals by ICP-MS (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAH0053 - ICP-MS_D (Continued)										
LCS (BAH0053-BS1)					Prepared: 8/3/2020 Analyzed: 8/4/2020					
Dissolved Barium	0.0477		0.00100	mg/L	0.0500		95.4	85-115		
Dissolved Chromium	0.0476		0.00100	mg/L	0.0500		95.1	85-115		
Dissolved Selenium	0.0453		0.00100	mg/L	0.0500		90.6	85-115		
Dissolved Silver	0.0473		0.00100	mg/L	0.0500		94.6	85-115		
Dissolved Lead	0.0471		0.00100	mg/L	0.0500		94.3	85-115		
Dissolved Mercury-Icpms	0.00262		0.000100	mg/L				85-115		
Dissolved Arsenic	0.0480		0.00100	mg/L	0.0500		96.0	85-115		
Dissolved Cadmium	0.0481		0.00100	mg/L	0.0500		96.1	85-115		
Matrix Spike (BAH0053-MS1)		**Source: MAG0582-22**			Prepared: 8/3/2020 Analyzed: 8/4/2020					
Dissolved Arsenic	0.468		0.0100	mg/L	0.500	0.00216	93.1	70-130		
Dissolved Cadmium	0.478		0.0100	mg/L	0.500	ND	95.6	70-130		
Dissolved Silver	0.476		0.0100	mg/L	0.500	ND	95.2	70-130		
Dissolved Mercury-Icpms	0.0244		0.00100	mg/L		ND		70-130		
Dissolved Lead	0.470		0.0100	mg/L	0.500	ND	94.0	70-130		
Dissolved Selenium	0.456		0.0100	mg/L	0.500	ND	91.3	70-130		
Dissolved Chromium	0.467		0.0100	mg/L	0.500	ND	93.4	70-130		
Dissolved Barium	0.472		0.0100	mg/L	0.500	0.0104	92.3	70-130		
Matrix Spike (BAH0053-MS2)		**Source: MAG0582-35**			Prepared: 8/3/2020 Analyzed: 8/4/2020					
Dissolved Cadmium	0.504		0.0100	mg/L	0.500	ND	101	70-130		
Dissolved Silver	0.496		0.0100	mg/L	0.500	ND	99.3	70-130		
Dissolved Arsenic	0.490		0.0100	mg/L	0.500	ND	98.0	70-130		
Dissolved Barium	0.534		0.0100	mg/L	0.500	0.0104	105	70-130		
Dissolved Chromium	0.509		0.0100	mg/L	0.500	ND	102	70-130		
Dissolved Mercury-Icpms	0.0258		0.00100	mg/L		ND		70-130		
Dissolved Lead	0.523		0.0100	mg/L	0.500	ND	105	70-130		
Dissolved Selenium	0.516		0.0100	mg/L	0.500	ND	103	70-130		

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Quality Control Data
(Continued)

Metals by ICP-MS (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAH0053 - ICP-MS_D (Continued)										
Matrix Spike Dup (BAH0053-MSD1)		**Source: MAG0582-22**			Prepared: 8/3/2020 Analyzed: 8/4/2020					
Dissolved Selenium	0.478		0.0100	mg/L	0.500	ND	95.5	70-130	4.54	20
Dissolved Lead	0.479		0.0100	mg/L	0.500	ND	95.8	70-130	1.96	20
Dissolved Cadmium	0.488		0.0100	mg/L	0.500	ND	97.6	70-130	1.97	20
Dissolved Silver	0.475		0.0100	mg/L	0.500	ND	94.9	70-130	0.335	20
Dissolved Chromium	0.494		0.0100	mg/L	0.500	ND	98.7	70-130	5.52	20
Dissolved Mercury-Icpms	0.0249		0.00100	mg/L		ND		70-130	2.39	20
Dissolved Barium	0.490		0.0100	mg/L	0.500	0.0104	95.8	70-130	3.72	20
Dissolved Arsenic	0.489		0.0100	mg/L	0.500	0.00216	97.5	70-130	4.59	20
Matrix Spike Dup (BAH0053-MSD2)		**Source: MAG0582-35**			Prepared: 8/3/2020 Analyzed: 8/4/2020					
Dissolved Chromium	0.496		0.0100	mg/L	0.500	ND	99.2	70-130	2.49	20
Dissolved Cadmium	0.522		0.0100	mg/L	0.500	ND	104	70-130	3.41	20
Dissolved Barium	0.480		0.0100	mg/L	0.500	0.0104	94.0	70-130	10.6	20
Dissolved Lead	0.507		0.0100	mg/L	0.500	ND	101	70-130	2.96	20
Dissolved Arsenic	0.488		0.0100	mg/L	0.500	ND	97.7	70-130	0.305	20
Dissolved Selenium	0.492		0.0100	mg/L	0.500	ND	98.3	70-130	4.88	20
Dissolved Silver	0.482		0.0100	mg/L	0.500	ND	96.5	70-130	2.87	20
Dissolved Mercury-Icpms	0.0252		0.00100	mg/L		ND		70-130	2.36	20
Batch: BAH0135 - 3050 Digest										
Blank (BAH0135-BLK1)					Prepared & Analyzed: 8/5/2020					
Arsenic	ND		0.0500	mg/kg wet						
LCS (BAH0135-BS1)					Prepared & Analyzed: 8/5/2020					
Arsenic	19.0		0.0500	mg/kg wet	20.0		95.0	80-120		

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Quality Control Data
(Continued)

Metals by ICP-MS (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAH0135 - 3050 Digest (Continued)										
Matrix Spike (BAH0135-MS1)		**Source: MAG0582-17**			Prepared & Analyzed: 8/5/2020					
Arsenic	23.7		0.0596	mg/kg dry	23.8	2.82	87.4	75-125		
Silver	6.01		0.596	mg/kg dry	5.96	ND	101	75-125		
Matrix Spike Dup (BAH0135-MSD1)		**Source: MAG0582-17**			Prepared & Analyzed: 8/5/2020					
Arsenic	24.6		0.0596	mg/kg dry	23.8	2.82	91.4	75-125	3.92	20
Batch: BAH0140 - 3050 Digest										
Blank (BAH0140-BLK1)					Prepared: 8/5/2020 Analyzed: 8/6/2020					
Barium	ND		0.500	mg/kg wet						
Selenium	ND		0.500	mg/kg wet						
Arsenic	ND		0.0500	mg/kg wet						
Chromium	ND		0.500	mg/kg wet						
LCS (BAH0140-BS1)					Prepared: 8/5/2020 Analyzed: 8/6/2020					
Arsenic	19.0		0.0500	mg/kg wet	20.0		94.8	80-120		
Selenium	18.1		0.500	mg/kg wet	20.0		90.7	80-120		
Chromium	19.0		0.500	mg/kg wet	20.0		95.2	80-120		
Barium	18.9		0.500	mg/kg wet	20.0		94.6	80-120		
Matrix Spike (BAH0140-MS1)		**Source: MAB0065-89**			Prepared: 8/5/2020 Analyzed: 8/6/2020					
Chromium	43.0		0.556	mg/kg wet	22.2		193	75-125		
Arsenic	24.6		0.0556	mg/kg wet	22.2		111	75-125		
Selenium	20.4		0.556	mg/kg wet	22.2		91.9	75-125		
Barium	228	M3	0.556	mg/kg wet	22.2		NR	75-125		
Matrix Spike Dup (BAH0140-MSD1)		**Source: MAB0065-89**			Prepared: 8/5/2020 Analyzed: 8/6/2020					
Arsenic	23.7		0.0556	mg/kg wet	22.2		107	75-125	3.69	20
Selenium	19.7		0.556	mg/kg wet	22.2		88.5	75-125	3.77	20
Barium	226	M3	0.556	mg/kg wet	22.2		NR	75-125	0.794	20
Chromium	41.6		0.556	mg/kg wet	22.2		187	75-125	3.33	20

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Quality Control Data
(Continued)

Metals by ICP-MS (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAH0166 - 3050 Digest										
Blank (BAH0166-BLK1)					Prepared & Analyzed: 8/6/2020					
Selenium	ND		0.500	mg/kg wet						
LCS (BAH0166-BS1)					Prepared & Analyzed: 8/6/2020					
Selenium	18.5		0.500	mg/kg wet	20.0		92.4	80-120		
Matrix Spike (BAH0166-MS1)		**Source: MAG0582-17**			Prepared & Analyzed: 8/6/2020					
Selenium	26.8		0.737	mg/kg dry	29.5	0.0868	90.6	75-125		
Matrix Spike Dup (BAH0166-MSD1)		**Source: MAG0582-17**			Prepared & Analyzed: 8/6/2020					
Selenium	27.3		0.741	mg/kg dry	29.6	0.0868	91.8	75-125	1.83	20

Quality Control Data
(Continued)

Mercury

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0704 - Hg Trace										
Blank (BAG0704-BLK1)					Prepared & Analyzed: 7/28/2020					
Mercury	ND		0.000100	ug/L						
LCS (BAG0704-BS1)					Prepared & Analyzed: 7/28/2020					
Mercury	0.00425		0.000100	ug/L	0.00500		85.0	76-113		
Matrix Spike (BAG0704-MS1)		**Source: MAG0235-01**			Prepared & Analyzed: 7/28/2020					
Mercury	0.0462		0.00100	ug/L	0.0500	0.00317	86.1	63-111		
Matrix Spike Dup (BAG0704-MSD1)		**Source: MAG0235-01**			Prepared & Analyzed: 7/28/2020					
Mercury	0.0460		0.00100	ug/L	0.0500	0.00317	85.7	63-111	0.369	18
Batch: BAG0880 - Hg Trace										
Blank (BAG0880-BLK1)					Prepared & Analyzed: 7/29/2020					
Mercury	0.000121	B10	0.000100	ug/L						
LCS (BAG0880-BS1)					Prepared & Analyzed: 7/29/2020					
Mercury	0.00449		0.000100	ug/L	0.00500		89.8	76-113		
Matrix Spike (BAG0880-MS1)		**Source: MAG0582-31**			Prepared & Analyzed: 7/29/2020					
Mercury	0.0515		0.00100	ug/L	0.0500	0.00854	85.9	63-111		
Matrix Spike Dup (BAG0880-MSD1)		**Source: MAG0582-31**			Prepared & Analyzed: 7/29/2020					
Mercury	0.0510		0.00100	ug/L	0.0500	0.00854	84.9	63-111	0.917	18

Quality Control Data
(Continued)

Semivolatiles

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Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0657 - SVOC Water										
Blank (BAG0657-BLK1)					Prepared: 7/21/2020 Analyzed: 7/24/2020					
Naphthalene	ND		0.0100	ug/L						
2-Methylnaphthalene	ND		0.0100	ug/L						
1-Methylnaphthalene	ND		0.0100	ug/L						
Acenaphthylene	ND		0.0100	ug/L						
Acenaphthene	ND		0.0100	ug/L						
Fluorene	ND		0.0100	ug/L						
Phenanthrene	ND		0.0100	ug/L						
Anthracene	ND		0.0100	ug/L						
Fluoranthene	ND		0.0100	ug/L						
Pyrene	ND		0.0100	ug/L						
Benzo[a]anthracene	ND		0.0100	ug/L						
Chrysene	ND		0.0100	ug/L						
Benzo[b]fluoranthene	ND		0.0100	ug/L						
Benzo[k]fluoranthene	ND		0.0100	ug/L						
Benzo[a]pyrene	ND		0.0100	ug/L						
Indeno[1,2,3-cd]pyrene	ND		0.0100	ug/L						
Dibenz[a,h]anthracene	ND		0.0100	ug/L						
Benzo[ghi]perylene	ND		0.0100	ug/L						
LCS (BAG0657-BS1)					Prepared: 7/21/2020 Analyzed: 7/24/2020					
Naphthalene	4.12		0.0100	ug/L	5.00		82.4	55-135		
2-Methylnaphthalene	4.25		0.0100	ug/L	5.00		85.0	55-135		
1-Methylnaphthalene	4.59		0.0100	ug/L	5.00		91.7	55-135		
Acenaphthylene	4.31		0.0100	ug/L	5.00		86.1	55-135		
Acenaphthene	4.23		0.0100	ug/L	5.00		84.5	55-135		
Fluorene	4.59		0.0100	ug/L	5.00		91.8	55-135		
Phenanthrene	4.53		0.0100	ug/L	5.00		90.7	55-135		
Anthracene	4.66		0.0100	ug/L	5.00		93.1	55-135		
Fluoranthene	4.75		0.0100	ug/L	5.00		95.0	55-135		
Pyrene	4.62		0.0100	ug/L	5.00		92.4	55-135		
Benzo[a]anthracene	5.01		0.0100	ug/L	5.00		100	55-135		
Chrysene	5.02		0.0100	ug/L	5.00		100	55-135		
Benzo[b]fluoranthene	4.78		0.0100	ug/L	5.00		95.7	55-135		
Benzo[k]fluoranthene	4.69		0.0100	ug/L	5.00		93.8	55-135		
Benzo[a]pyrene	4.82		0.0100	ug/L	5.00		96.3	55-135		
Indeno[1,2,3-cd]pyrene	5.38		0.0100	ug/L	5.00		108	55-135		
Dibenz[a,h]anthracene	5.41		0.0100	ug/L	5.00		108	55-135		
Benzo[ghi]perylene	5.17		0.0100	ug/L	5.00		103	55-135		

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Quality Control Data
(Continued)

Semivolatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0657 - SVOC Water (Continued)										
LCS Dup (BAG0657-BSD1)					Prepared: 7/21/2020 Analyzed: 7/24/2020					
Naphthalene	4.32		0.0100	ug/L	5.00		86.4	55-135	4.74	50
2-Methylnaphthalene	4.34		0.0100	ug/L	5.00		86.8	55-135	2.05	50
1-Methylnaphthalene	4.64		0.0100	ug/L	5.00		92.9	55-135	1.26	50
Acenaphthylene	4.29		0.0100	ug/L	5.00		85.9	55-135	0.295	50
Acenaphthene	4.46		0.0100	ug/L	5.00		89.2	55-135	5.40	50
Fluorene	4.97		0.0100	ug/L	5.00		99.4	55-135	7.98	50
Phenanthrene	4.77		0.0100	ug/L	5.00		95.4	55-135	5.12	50
Anthracene	4.87		0.0100	ug/L	5.00		97.5	55-135	4.57	50
Fluoranthene	5.00		0.0100	ug/L	5.00		100	55-135	5.14	50
Pyrene	4.75		0.0100	ug/L	5.00		95.1	55-135	2.82	50
Benzo[a]anthracene	5.17		0.0100	ug/L	5.00		103	55-135	3.21	50
Chrysene	5.25		0.0100	ug/L	5.00		105	55-135	4.49	50
Benzo[b]fluoranthene	4.96		0.0100	ug/L	5.00		99.1	55-135	3.54	50
Benzo[k]fluoranthene	4.82		0.0100	ug/L	5.00		96.5	55-135	2.79	50
Benzo[a]pyrene	4.76		0.0100	ug/L	5.00		95.1	55-135	1.24	50
Indeno[1,2,3-cd]pyrene	5.36		0.0100	ug/L	5.00		107	55-135	0.536	50
Dibenz[a,h]anthracene	5.25		0.0100	ug/L	5.00		105	55-135	2.98	50
Benzo[ghi]perylene	5.31		0.0100	ug/L	5.00		106	55-135	2.74	50
Batch: BAG0716 - TPH-Dx										
Blank (BAG0716-BLK1)					Prepared: 7/23/2020 Analyzed: 7/28/2020					
Diesel	ND		0.100	mg/L						
Lube Oil	ND		0.500	mg/L						
Surrogate: Hexacosane			*0.0478*	*mg/L*	*0.0500*		*95.7*	*50-150*		
LCS (BAG0716-BS1)					Prepared: 7/23/2020 Analyzed: 7/28/2020					
Diesel	0.410		0.100	mg/L	0.500		82.0	70-130		
Surrogate: Hexacosane			*0.0479*	*mg/L*	*0.0500*		*95.8*	*50-150*		

Quality Control Data
(Continued)

Semivolatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0716 - TPH-Dx (Continued)										
LCS Dup (BAG0716-BSD1)					Prepared: 7/23/2020 Analyzed: 7/28/2020					
Diesel	0.458		0.100	mg/L	0.500		91.6	70-130	11.1	20
Surrogate: Hexacosane			*0.0493*	*mg/L*	*0.0500*		*98.6*	*50-150*		
Batch: BAG0739 - ASE Ext										
Blank (BAG0739-BLK1)					Prepared: 7/24/2020 Analyzed: 7/31/2020					
Naphthalene	ND		0.0100	mg/kg wet						
2-Methylnaphthalene	ND		0.0100	mg/kg wet						
1-Methylnaphthalene	ND		0.0100	mg/kg wet						
Acenaphthylene	ND		0.0100	mg/kg wet						
Acenaphthene	ND		0.0100	mg/kg wet						
Fluorene	ND		0.0100	mg/kg wet						
Phenanthrene	ND		0.0100	mg/kg wet						
Anthracene	ND		0.0100	mg/kg wet						
Fluoranthene	ND		0.0100	mg/kg wet						
Pyrene	ND		0.0100	mg/kg wet						
Benzo[a]anthracene	ND		0.0100	mg/kg wet						
Chrysene	ND		0.0100	mg/kg wet						
Benzo[b]fluoranthene	ND		0.0100	mg/kg wet						
Benzo[k]fluoranthene	ND		0.0100	mg/kg wet						
Benzo[a]pyrene	ND		0.0100	mg/kg wet						
Indeno[1,2,3-cd]pyrene	ND		0.0100	mg/kg wet						
Dibenz[a,h]anthracene	ND		0.0100	mg/kg wet						
Benzo[ghi]perylene	ND		0.0100	mg/kg wet						
Surrogate: Terphenyl-d14			*5.77*	*mg/kg wet*	*5.10*		*113*	*60-130*		
LCS (BAG0739-BS1)					Prepared: 7/24/2020 Analyzed: 7/31/2020					
Naphthalene	0.820		0.0100	mg/kg wet	1.00		82.0	32-133		
2-Methylnaphthalene	0.971		0.0100	mg/kg wet	1.00		97.1	45-138		
1-Methylnaphthalene	1.01		0.0100	mg/kg wet	1.00		101	47-135		
Acenaphthylene	1.09		0.0100	mg/kg wet	1.00		109	48-136		
Acenaphthene	1.02		0.0100	mg/kg wet	1.00		102	52-127		
Fluorene	1.12		0.0100	mg/kg wet	1.00		112	56-126		
Phenanthrene	1.10		0.0100	mg/kg wet	1.00		110	69-127		
Anthracene	1.18		0.0100	mg/kg wet	1.00		118	32-141		
Fluoranthene	1.11		0.0100	mg/kg wet	1.00		111	45-130		
Pyrene	1.03		0.0100	mg/kg wet	1.00		103	71-141		
Benzo[a]anthracene	1.15		0.0100	mg/kg wet	1.00		115	47-139		
Chrysene	1.14		0.0100	mg/kg wet	1.00		114	36-133		
Benzo[b]fluoranthene	1.19		0.0100	mg/kg wet	1.00		119	48-177		
Benzo[k]fluoranthene	1.17		0.0100	mg/kg wet	1.00		117	47-169		
Benzo[a]pyrene	1.15		0.0100	mg/kg wet	1.00		115	51-155		
Indeno[1,2,3-cd]pyrene	1.18		0.0100	mg/kg wet	1.00		118	66-166		
Dibenz[a,h]anthracene	1.17		0.0100	mg/kg wet	1.00		117	57-155		
Benzo[ghi]perylene	1.15		0.0100	mg/kg wet	1.00		115	49-165		
Surrogate: Terphenyl-d14			*4.87*	*mg/kg wet*	*5.10*		*95.6*	*60-130*		

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Quality Control Data
(Continued)

Semivolatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0739 - ASE Ext (Continued)										
LCS Dup (BAG0739-BSD1)					Prepared: 7/24/2020 Analyzed: 7/31/2020					
Naphthalene	0.695		0.0100	mg/kg wet	1.00		69.5	32-133	16.5	50
2-Methylnaphthalene	0.838		0.0100	mg/kg wet	1.00		83.8	45-138	14.6	50
1-Methylnaphthalene	0.899		0.0100	mg/kg wet	1.00		89.9	47-135	11.4	50
Acenaphthylene	0.996		0.0100	mg/kg wet	1.00		99.6	48-136	8.83	50
Acenaphthene	0.917		0.0100	mg/kg wet	1.00		91.7	52-127	10.9	50
Fluorene	1.01		0.0100	mg/kg wet	1.00		101	56-126	10.5	50
Phenanthrene	0.973		0.0100	mg/kg wet	1.00		97.3	69-127	12.0	50
Anthracene	1.06		0.0100	mg/kg wet	1.00		106	32-141	10.5	50
Fluoranthene	0.924		0.0100	mg/kg wet	1.00		92.4	45-130	18.5	50
Pyrene	0.973		0.0100	mg/kg wet	1.00		97.3	71-141	6.11	50
Benzo[a]anthracene	1.05		0.0100	mg/kg wet	1.00		105	47-139	9.00	50
Chrysene	1.07		0.0100	mg/kg wet	1.00		107	36-133	6.02	50
Benzo[b]fluoranthene	1.07		0.0100	mg/kg wet	1.00		107	48-177	10.3	50
Benzo[k]fluoranthene	1.05		0.0100	mg/kg wet	1.00		105	47-169	10.6	50
Benzo[a]pyrene	1.06		0.0100	mg/kg wet	1.00		106	51-155	8.54	50
Indeno[1,2,3-cd]pyrene	1.07		0.0100	mg/kg wet	1.00		107	66-166	9.78	50
Dibenz[a,h]anthracene	1.06		0.0100	mg/kg wet	1.00		106	57-155	9.98	50
Benzo[ghi]perylene	1.05		0.0100	mg/kg wet	1.00		105	49-165	9.37	50
Surrogate: Terphenyl-d14			*4.61*	*mg/kg wet*	*5.10*		*90.4*	*60-130*		
Matrix Spike (BAG0739-MS1)		**Source: MAG0582-12**			Prepared: 7/24/2020 Analyzed: 7/31/2020					
Naphthalene	0.885		0.0108	mg/kg dry	1.08	ND	82.2	30-140		
2-Methylnaphthalene	0.992		0.0108	mg/kg dry	1.08	ND	92.1	30-140		
1-Methylnaphthalene	1.03		0.0108	mg/kg dry	1.08	ND	95.9	30-140		
Acenaphthylene	1.11		0.0108	mg/kg dry	1.08	ND	103	30-140		
Acenaphthene	1.04		0.0108	mg/kg dry	1.08	ND	97.1	30-140		
Fluorene	1.15		0.0108	mg/kg dry	1.08	ND	107	30-140		
Phenanthrene	1.12		0.0108	mg/kg dry	1.08	ND	104	30-140		
Anthracene	1.20		0.0108	mg/kg dry	1.08	ND	112	30-140		
Fluoranthene	1.21		0.0108	mg/kg dry	1.08	ND	112	30-140		
Pyrene	1.09		0.0108	mg/kg dry	1.08	ND	102	30-140		
Benzo[a]anthracene	1.18		0.0108	mg/kg dry	1.08	ND	109	30-140		
Chrysene	1.17		0.0108	mg/kg dry	1.08	ND	109	30-140		
Benzo[b]fluoranthene	1.25		0.0108	mg/kg dry	1.08	ND	116	30-140		
Benzo[k]fluoranthene	1.23		0.0108	mg/kg dry	1.08	ND	114	30-140		
Benzo[a]pyrene	1.17		0.0108	mg/kg dry	1.08	ND	108	30-140		
Indeno[1,2,3-cd]pyrene	1.28		0.0108	mg/kg dry	1.08	ND	118	30-140		
Dibenz[a,h]anthracene	1.27		0.0108	mg/kg dry	1.08	ND	118	30-140		
Benzo[ghi]perylene	1.26		0.0108	mg/kg dry	1.08	ND	117	30-140		
Surrogate: Terphenyl-d14			*4.88*	*mg/kg dry*	*5.49*		*88.9*	*60-130*		

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Quality Control Data
(Continued)

Semivolatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0739 - ASE Ext (Continued)										
Matrix Spike Dup (BAG0739-MSD1)		**Source: MAG0582-12**		Prepared: 7/24/2020 Analyzed: 7/31/2020						
Naphthalene	0.848		0.0106	mg/kg dry	1.06	ND	79.7	30-140	4.29	50
2-Methylnaphthalene	1.01		0.0106	mg/kg dry	1.06	ND	94.6	30-140	1.44	50
1-Methylnaphthalene	1.01		0.0106	mg/kg dry	1.06	ND	94.8	30-140	2.39	50
Acenaphthylene	1.03		0.0106	mg/kg dry	1.06	ND	97.2	30-140	6.91	50
Acenaphthene	0.992		0.0106	mg/kg dry	1.06	ND	93.2	30-140	5.22	50
Fluorene	1.11		0.0106	mg/kg dry	1.06	ND	104	30-140	4.04	50
Phenanthrene	1.07		0.0106	mg/kg dry	1.06	ND	100	30-140	5.37	50
Anthracene	1.16		0.0106	mg/kg dry	1.06	ND	109	30-140	3.27	50
Fluoranthene	1.16		0.0106	mg/kg dry	1.06	ND	109	30-140	4.29	50
Pyrene	0.935		0.0106	mg/kg dry	1.06	ND	87.9	30-140	15.7	50
Benzo[a]anthracene	1.13		0.0106	mg/kg dry	1.06	ND	106	30-140	3.90	50
Chrysene	1.13		0.0106	mg/kg dry	1.06	ND	106	30-140	4.10	50
Benzo[b]fluoranthene	1.05		0.0106	mg/kg dry	1.06	ND	98.8	30-140	17.5	50
Benzo[k]fluoranthene	1.04		0.0106	mg/kg dry	1.06	ND	97.8	30-140	16.4	50
Benzo[a]pyrene	1.14		0.0106	mg/kg dry	1.06	ND	107	30-140	2.43	50
Indeno[1,2,3-cd]pyrene	1.21		0.0106	mg/kg dry	1.06	ND	114	30-140	5.37	50
Dibenz[a,h]anthracene	1.24		0.0106	mg/kg dry	1.06	ND	116	30-140	2.30	50
Benzo[ghi]perylene	1.16		0.0106	mg/kg dry	1.06	ND	109	30-140	8.86	50
Surrogate: Terphenyl-d14			*4.43*	*mg/kg dry*	*5.43*		*81.6*	*60-130*		
Batch: BAG0796 - TPH-Dx										
Blank (BAG0796-BLK1)				Prepared: 7/27/2020 Analyzed: 7/29/2020						
Lube Oil	ND		100	mg/kg wet						
Diesel	ND		25.0	mg/kg wet						
Surrogate: Hexacosane			*11.4*	*mg/kg wet*	*10.0*		*114*	*50-150*		

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Quality Control Data
(Continued)

Semivolatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0796 - TPH-Dx (Continued)										
LCS (BAG0796-BS1)				Prepared: 7/27/2020 Analyzed: 7/29/2020						
Diesel	115		25.0	mg/kg wet	100		115	70-130		
Surrogate: Hexacosane			*9.83*	*mg/kg wet*	*10.0*		*98.3*	*50-150*		
LCS Dup (BAG0796-BSD1)				Prepared: 7/27/2020 Analyzed: 7/29/2020						
Diesel	111		25.0	mg/kg wet	100		111	70-130	3.25	20
Surrogate: Hexacosane			*9.15*	*mg/kg wet*	*10.0*		*91.5*	*50-150*		
Matrix Spike (BAG0796-MS1)		**Source: MAG0582-09**		Prepared: 7/27/2020 Analyzed: 7/29/2020						
Diesel	111		28.1	mg/kg dry	112	ND	98.9	50-150		
Surrogate: Hexacosane			*11.4*	*mg/kg dry*	*11.2*		*102*	*50-150*		
Matrix Spike Dup (BAG0796-MSD1)		**Source: MAG0582-09**		Prepared: 7/27/2020 Analyzed: 7/29/2020						
Diesel	99.0		26.7	mg/kg dry	107	ND	92.8	50-150	11.4	25
Surrogate: Hexacosane			*10.5*	*mg/kg dry*	*10.7*		*98.7*	*50-150*		
Batch: BAG0977 - ASE Ext										
Blank (BAG0977-BLK1)				Prepared: 7/28/2020 Analyzed: 8/4/2020						
Naphthalene	ND		0.0100	mg/kg wet						
2-Methylnaphthalene	ND		0.0100	mg/kg wet						
1-Methylnaphthalene	ND		0.0100	mg/kg wet						
Acenaphthylene	ND		0.0100	mg/kg wet						
Acenaphthene	ND		0.0100	mg/kg wet						
Fluorene	ND		0.0100	mg/kg wet						
Phenanthrene	ND		0.0100	mg/kg wet						
Anthracene	ND		0.0100	mg/kg wet						
Fluoranthene	ND		0.0100	mg/kg wet						
Pyrene	ND		0.0100	mg/kg wet						
Benzo[a]anthracene	ND		0.0100	mg/kg wet						
Chrysene	ND		0.0100	mg/kg wet						
Benzo[b]fluoranthene	ND		0.0100	mg/kg wet						
Benzo[k]fluoranthene	ND		0.0100	mg/kg wet						
Benzo[a]pyrene	ND		0.0100	mg/kg wet						
Indeno[1,2,3-cd]pyrene	ND		0.0100	mg/kg wet						
Dibenz[a,h]anthracene	ND		0.0100	mg/kg wet						
Benzo[ghi]perylene	ND		0.0100	mg/kg wet						
Surrogate: Terphenyl-d14			*3.93*	*mg/kg wet*	*5.10*		*77.1*	*60-130*		

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Quality Control Data
(Continued)

Semivolatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0977 - ASE Ext (Continued)										
LCS (BAG0977-BS1)					Prepared: 7/28/2020 Analyzed: 8/4/2020					
Naphthalene	0.801		0.0100	mg/kg wet	1.00		80.1	32-133		
2-Methylnaphthalene	0.902		0.0100	mg/kg wet	1.00		90.2	45-138		
1-Methylnaphthalene	0.935		0.0100	mg/kg wet	1.00		93.5	47-135		
Acenaphthylene	1.02		0.0100	mg/kg wet	1.00		102	48-136		
Acenaphthene	0.929		0.0100	mg/kg wet	1.00		92.9	52-127		
Fluorene	1.07		0.0100	mg/kg wet	1.00		107	56-126		
Phenanthrene	0.972		0.0100	mg/kg wet	1.00		97.2	69-127		
Anthracene	1.05		0.0100	mg/kg wet	1.00		105	32-141		
Fluoranthene	1.01		0.0100	mg/kg wet	1.00		101	45-130		
Pyrene	0.811		0.0100	mg/kg wet	1.00		81.1	71-141		
Benzo[a]anthracene	1.06		0.0100	mg/kg wet	1.00		106	47-139		
Chrysene	0.977		0.0100	mg/kg wet	1.00		97.7	36-133		
Benzo[b]fluoranthene	0.942		0.0100	mg/kg wet	1.00		94.2	48-177		
Benzo[k]fluoranthene	1.00		0.0100	mg/kg wet	1.00		100	47-169		
Benzo[a]pyrene	1.07		0.0100	mg/kg wet	1.00		107	51-155		
Indeno[1,2,3-cd]pyrene	1.12		0.0100	mg/kg wet	1.00		112	66-166		
Dibenz[a,h]anthracene	1.14		0.0100	mg/kg wet	1.00		114	57-155		
Benzo[ghi]perylene	1.22		0.0100	mg/kg wet	1.00		122	49-165		
Surrogate: Terphenyl-d14			*4.05*	*mg/kg wet*	*5.10*		*79.4*	*60-130*		
LCS Dup (BAG0977-BSD1)					Prepared: 7/28/2020 Analyzed: 8/4/2020					
Naphthalene	0.841		0.0100	mg/kg wet	1.00		84.1	32-133	4.87	50
2-Methylnaphthalene	0.927		0.0100	mg/kg wet	1.00		92.7	45-138	2.76	50
1-Methylnaphthalene	0.979		0.0100	mg/kg wet	1.00		97.9	47-135	4.51	50
Acenaphthylene	1.02		0.0100	mg/kg wet	1.00		102	48-136	0.289	50
Acenaphthene	0.939		0.0100	mg/kg wet	1.00		93.9	52-127	1.14	50
Fluorene	1.05		0.0100	mg/kg wet	1.00		105	56-126	1.89	50
Phenanthrene	0.983		0.0100	mg/kg wet	1.00		98.3	69-127	1.09	50
Anthracene	1.07		0.0100	mg/kg wet	1.00		107	32-141	1.77	50
Fluoranthene	1.11		0.0100	mg/kg wet	1.00		111	45-130	8.93	50
Pyrene	0.827		0.0100	mg/kg wet	1.00		82.7	71-141	1.93	50
Benzo[a]anthracene	1.08		0.0100	mg/kg wet	1.00		108	47-139	1.62	50
Chrysene	1.01		0.0100	mg/kg wet	1.00		101	36-133	2.79	50
Benzo[b]fluoranthene	1.01		0.0100	mg/kg wet	1.00		101	48-177	6.56	50
Benzo[k]fluoranthene	1.03		0.0100	mg/kg wet	1.00		103	47-169	2.85	50
Benzo[a]pyrene	1.08		0.0100	mg/kg wet	1.00		108	51-155	0.872	50
Indeno[1,2,3-cd]pyrene	1.06		0.0100	mg/kg wet	1.00		106	66-166	5.87	50
Dibenz[a,h]anthracene	1.08		0.0100	mg/kg wet	1.00		108	57-155	5.08	50
Benzo[ghi]perylene	1.17		0.0100	mg/kg wet	1.00		117	49-165	3.85	50
Surrogate: Terphenyl-d14			*4.10*	*mg/kg wet*	*5.10*		*80.4*	*60-130*		

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Quality Control Data
(Continued)

Semivolatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0977 - ASE Ext (Continued)										
Matrix Spike (BAG0977-MS1)		**Source: MAG0582-17**			Prepared: 7/28/2020 Analyzed: 8/4/2020					
Naphthalene	0.927		0.0119	mg/kg dry	1.19	ND	78.2	30-140		
2-Methylnaphthalene	1.15		0.0119	mg/kg dry	1.19	ND	97.2	30-140		
1-Methylnaphthalene	1.07		0.0119	mg/kg dry	1.19	ND	89.9	30-140		
Acenaphthylene	1.15		0.0119	mg/kg dry	1.19	ND	97.1	30-140		
Acenaphthene	1.08		0.0119	mg/kg dry	1.19	ND	91.4	30-140		
Fluorene	1.13		0.0119	mg/kg dry	1.19	ND	94.9	30-140		
Phenanthrene	1.15		0.0119	mg/kg dry	1.19	ND	96.7	30-140		
Anthracene	1.25		0.0119	mg/kg dry	1.19	ND	105	30-140		
Fluoranthene	1.21		0.0119	mg/kg dry	1.19	0.0588	97.3	30-140		
Pyrene	0.868		0.0119	mg/kg dry	1.19	0.00832	72.5	30-140		
Benzo[a]anthracene	1.23		0.0119	mg/kg dry	1.19	0.00867	103	30-140		
Chrysene	1.14		0.0119	mg/kg dry	1.19	ND	96.1	30-140		
Benzo[b]fluoranthene	1.21		0.0119	mg/kg dry	1.19	ND	102	30-140		
Benzo[k]fluoranthene	1.24		0.0119	mg/kg dry	1.19	ND	104	30-140		
Benzo[a]pyrene	1.25		0.0119	mg/kg dry	1.19	0.00622	105	30-140		
Indeno[1,2,3-cd]pyrene	1.37		0.0119	mg/kg dry	1.19	ND	115	30-140		
Dibenz[a,h]anthracene	1.41		0.0119	mg/kg dry	1.19	ND	119	30-140		
Benzo[ghi]perylene	1.46		0.0119	mg/kg dry	1.19	0.0126	122	30-140		
Surrogate: Terphenyl-d14			*4.38*	*mg/kg dry*	*6.05*		*72.5*	*60-130*		
Matrix Spike Dup (BAG0977-MSD1)		**Source: MAG0582-17**			Prepared: 7/28/2020 Analyzed: 8/4/2020					
Naphthalene	0.958		0.0119	mg/kg dry	1.19	ND	80.8	30-140	3.27	50
2-Methylnaphthalene	1.10		0.0119	mg/kg dry	1.19	ND	92.9	30-140	4.53	50
1-Methylnaphthalene	1.13		0.0119	mg/kg dry	1.19	ND	95.2	30-140	5.67	50
Acenaphthylene	1.30		0.0119	mg/kg dry	1.19	ND	110	30-140	12.2	50
Acenaphthene	1.10		0.0119	mg/kg dry	1.19	ND	92.7	30-140	1.37	50
Fluorene	1.29		0.0119	mg/kg dry	1.19	ND	109	30-140	13.9	50
Phenanthrene	1.17		0.0119	mg/kg dry	1.19	ND	98.9	30-140	2.30	50
Anthracene	1.28		0.0119	mg/kg dry	1.19	ND	108	30-140	2.26	50
Fluoranthene	1.22		0.0119	mg/kg dry	1.19	0.0588	97.9	30-140	0.570	50
Pyrene	0.933		0.0119	mg/kg dry	1.19	0.00832	77.9	30-140	7.17	50
Benzo[a]anthracene	1.26		0.0119	mg/kg dry	1.19	0.00867	106	30-140	2.57	50
Chrysene	1.16		0.0119	mg/kg dry	1.19	ND	98.1	30-140	2.05	50
Benzo[b]fluoranthene	1.18		0.0119	mg/kg dry	1.19	ND	99.1	30-140	3.03	50
Benzo[k]fluoranthene	1.20		0.0119	mg/kg dry	1.19	ND	101	30-140	3.21	50
Benzo[a]pyrene	1.30		0.0119	mg/kg dry	1.19	0.00622	109	30-140	4.18	50
Indeno[1,2,3-cd]pyrene	1.30		0.0119	mg/kg dry	1.19	ND	110	30-140	4.75	50
Dibenz[a,h]anthracene	1.37		0.0119	mg/kg dry	1.19	ND	116	30-140	2.89	50
Benzo[ghi]perylene	1.42		0.0119	mg/kg dry	1.19	0.0126	119	30-140	2.66	50
Surrogate: Terphenyl-d14			*4.80*	*mg/kg dry*	*6.05*		*79.3*	*60-130*		

Quality Control Data
(Continued)

Volatiles

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0741 - VOC										
Blank (BAG0741-BLK1)					Prepared & Analyzed: 7/24/2020					

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0741 - VOC (Continued)										
Blank (BAG0741-BLK1)					Prepared & Analyzed: 7/24/2020					
1,2,4-Trichlorobenzene	ND		0.000500	mg/kg wet						
1,2-Dibromoethane (EDB)	ND		0.000500	mg/kg wet						
1,1,2-Trichloroethane	ND		0.000500	mg/kg wet						
1,1-Dichloroethane	ND		0.000500	mg/kg wet						
1,1-Dichloroethene	ND		0.000500	mg/kg wet						
1,1-dichloropropene	ND		0.000500	mg/kg wet						
1,2,3-Trichlorobenzene	ND		0.000500	mg/kg wet						
1,2,3-Trichloropropane	ND		0.000500	mg/kg wet						
1,2-Dibromo-3-chloropropane(DBCP)	ND		0.000500	mg/kg wet						
1,2,4-Trimethylbenzene	ND		0.000500	mg/kg wet						
2-Chlorotoluene	ND		0.000500	mg/kg wet						
1,2-Dichlorobenzene	ND		0.000500	mg/kg wet						
1,2-Dichloroethane	ND		0.000500	mg/kg wet						
1,3,5-Trimethylbenzene	ND		0.000500	mg/kg wet						
1,3-Dichlorobenzene	ND		0.000500	mg/kg wet						
1,3-Dichloropropane	ND		0.000500	mg/kg wet						
1,4-Dichlorobenzene	ND		0.000500	mg/kg wet						
2,2-Dichloropropane	ND		0.000500	mg/kg wet						
Dibromomethane	ND		0.000500	mg/kg wet						
Styrene	ND		0.000500	mg/kg wet						
m+p-Xylene	ND		0.000500	mg/kg wet						
Methyl ethyl ketone (MEK)	ND		0.00250	mg/kg wet						
Methyl isobutyl ketone (MIBK)	ND		0.00250	mg/kg wet						
Methylene chloride	ND		0.00250	mg/kg wet						
methyl-t-butyl ether (MTBE)	ND		0.000500	mg/kg wet						
Naphthalene	ND		0.000500	mg/kg wet						
n-Butylbenzene	ND		0.000500	mg/kg wet						
n-Propylbenzene	ND		0.000500	mg/kg wet						
o-Xylene	ND		0.000500	mg/kg wet						
cis-1,3-Dichloropropene	ND		0.000500	mg/kg wet						
sec-Butylbenzene	ND		0.000500	mg/kg wet						
Ethylbenzene	ND		0.000500	mg/kg wet						
tert-Butylbenzene	ND		0.000500	mg/kg wet						
Tetrachloroethene	ND		0.000500	mg/kg wet						
Toluene	ND		0.000500	mg/kg wet						
trans-1,2-Dichloroethene	ND		0.000500	mg/kg wet						
trans-1,3-Dichloropropene	ND		0.000500	mg/kg wet						
Trichloroethene	ND		0.000500	mg/kg wet						
Trichlorofluoromethane	ND		0.000500	mg/kg wet						
Vinyl Chloride	ND		0.000500	mg/kg wet						
p-isopropyltoluene	ND		0.000500	mg/kg wet						
Carbon Tetrachloride	ND		0.000500	mg/kg wet						
4-Chlorotoluene	ND		0.000500	mg/kg wet						
Acetone	ND		0.00250	mg/kg wet						
Acrylonitrile	ND		0.000500	mg/kg wet						
Benzene	ND		0.000500	mg/kg wet						
Bromobenzene	ND		0.000500	mg/kg wet						
Bromochloromethane	ND		0.000500	mg/kg wet						
Bromodichloromethane	ND		0.000500	mg/kg wet						
Bromoform	ND		0.000500	mg/kg wet						
Isopropylbenzene	ND		0.000500	mg/kg wet						
Carbon disulfide	ND		0.000500	mg/kg wet						
Hexachlorobutadiene	ND		0.000500	mg/kg wet						

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0741 - VOC (Continued)										
Blank (BAG0741-BLK1)					Prepared & Analyzed: 7/24/2020					
Chlorobenzene	ND		0.000500	mg/kg wet						
Chloroethane	ND		0.000500	mg/kg wet						
Chloroform	ND		0.000500	mg/kg wet						
Chloromethane	ND		0.000500	mg/kg wet						
cis-1,2-dichloroethene	ND		0.000500	mg/kg wet						
1,1,2,2-Tetrachloroethane	ND		0.000500	mg/kg wet						
Dibromochloromethane	ND		0.000500	mg/kg wet						
Dichlorodifluoromethane	ND		0.000500	mg/kg wet						
2-hexanone	ND		0.00250	mg/kg wet						
Bromomethane	ND		0.000500	mg/kg wet						
1,1,1,2-Tetrachloroethane	ND		0.000500	mg/kg wet						
1,1,1-Trichloroethane	ND		0.000500	mg/kg wet						
1,2-Dichloropropane	ND		0.000500	mg/kg wet						
Surrogate: Toluene-d8			*25.0*	*ug/L*	*25.0*		*100*	*70-130*		
Surrogate: 4-Bromofluorobenzene			*21.1*	*ug/L*	*25.0*		*84.3*	*70-130*		
Surrogate: 1,2-Dichlorobenzene-d4			*22.2*	*ug/L*	*19.0*		*117*	*70-130*		
LCS (BAG0741-BS1)					Prepared & Analyzed: 7/24/2020					
4-Chlorotoluene	0.0120		0.000500	mg/kg wet	0.0100		120	80-120		
1,3-Dichlorobenzene	0.0108		0.000500	mg/kg wet	0.0100		108	80-120		
1,3-Dichloropropane	0.0119		0.000500	mg/kg wet	0.0100		119	80-120		
1,4-Dichlorobenzene	0.0106		0.000500	mg/kg wet	0.0100		106	80-120		
2,2-Dichloropropane	0.0102		0.000500	mg/kg wet	0.0100		102	80-120		
2-Chlorotoluene	0.0115		0.000500	mg/kg wet	0.0100		115	80-120		
1,1,1,2-Tetrachloroethane	0.0112		0.000500	mg/kg wet	0.0100		112	80-120		
1,2-Dichloroethane	0.0104		0.000500	mg/kg wet	0.0100		104	80-120		
Acrylonitrile	0.0112		0.000500	mg/kg wet	0.0100		112	80-120		
Benzene	0.0108		0.000500	mg/kg wet	0.0100		108	80-120		
Bromobenzene	0.0105		0.000500	mg/kg wet	0.0100		105	80-120		
Bromochloromethane	0.00984		0.000500	mg/kg wet	0.0100		98.4	80-120		
Bromodichloromethane	0.0105		0.000500	mg/kg wet	0.0100		105	80-120		
2-hexanone	0.0125		0.00250	mg/kg wet	0.0100		125	80-120		
1,2,3-Trichloropropane	0.0125		0.000500	mg/kg wet	0.0100		125	80-120		
1,1,1-Trichloroethane	0.0107		0.000500	mg/kg wet	0.0100		107	80-120		
1,1,2,2-Tetrachloroethane	0.0119		0.000500	mg/kg wet	0.0100		119	80-120		
1,1,2-Trichloroethane	0.0120		0.000500	mg/kg wet	0.0100		120	80-120		
1,1-Dichloroethane	0.0100		0.000500	mg/kg wet	0.0100		100	80-120		
1,1-Dichloroethene	0.0110		0.000500	mg/kg wet	0.0100		110	80-120		
1,3,5-Trimethylbenzene	0.0114		0.000500	mg/kg wet	0.0100		114	80-120		
1,2,3-Trichlorobenzene	0.0120		0.000500	mg/kg wet	0.0100		120	80-120		
1,2-Dichloropropane	0.0110		0.000500	mg/kg wet	0.0100		110	80-120		
1,2,4-Trichlorobenzene	0.0106		0.000500	mg/kg wet	0.0100		106	80-120		
1,2,4-Trimethylbenzene	0.0112		0.000500	mg/kg wet	0.0100		112	80-120		
1,2-Dibromo-3-chloropropane(DBCP)	0.0121		0.000500	mg/kg wet	0.0100		121	80-120		
1,2-Dibromoethane (EDB)	0.0118		0.000500	mg/kg wet	0.0100		118	70-130		
1,2-Dichlorobenzene	0.0101		0.000500	mg/kg wet	0.0100		101	80-120		
1,1-dichloropropene	0.0115		0.000500	mg/kg wet	0.0100		115	80-120		
Toluene	0.0107		0.000500	mg/kg wet	0.0100		107	80-120		
n-Propylbenzene	0.0113		0.000500	mg/kg wet	0.0100		113	80-120		
o-Xylene	0.0107		0.000500	mg/kg wet	0.0100		107	80-120		
p-isopropyltoluene	0.0112		0.000500	mg/kg wet	0.0100		112	80-120		
sec-Butylbenzene	0.0114		0.000500	mg/kg wet	0.0100		114	80-120		

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0741 - VOC (Continued)										
LCS (BAG0741-BS1)					Prepared & Analyzed: 7/24/2020					
Styrene	0.0107		0.000500	mg/kg wet	0.0100		107	80-120		
Carbon disulfide	0.0120		0.000500	mg/kg wet	0.0100		120	80-120		
Tetrachloroethene	0.0110		0.000500	mg/kg wet	0.0100		110	80-120		
methyl-t-butyl ether (MTBE)	0.0102		0.000500	mg/kg wet	0.0100		102	80-120		
trans-1,2-Dichloroethene	0.00957		0.000500	mg/kg wet	0.0100		95.7	80-120		
trans-1,3-Dichloropropene	0.0119		0.000500	mg/kg wet	0.0100		119	80-120		
Trichloroethene	0.0105		0.000500	mg/kg wet	0.0100		105	80-120		
Trichlorofluoromethane	0.0112		0.000500	mg/kg wet	0.0100		112	80-120		
Vinyl Chloride	0.00973		0.000500	mg/kg wet	0.0100		97.3	80-120		
tert-Butylbenzene	0.0112		0.000500	mg/kg wet	0.0100		112	80-120		
Ethylbenzene	0.0109		0.000500	mg/kg wet	0.0100		109	80-120		
Bromoform	0.0116		0.000500	mg/kg wet	0.0100		116	80-120		
Chloroethane	0.0102		0.000500	mg/kg wet	0.0100		102	80-120		
Chloroform	0.00960		0.000500	mg/kg wet	0.0100		96.0	80-120		
cis-1,2-dichloroethene	0.00959		0.000500	mg/kg wet	0.0100		95.9	80-120		
cis-1,3-Dichloropropene	0.0112		0.000500	mg/kg wet	0.0100		112	80-120		
Dibromochloromethane	0.0120		0.000500	mg/kg wet	0.0100		120	80-120		
n-Butylbenzene	0.0113		0.000500	mg/kg wet	0.0100		113	80-120		
Dichlorodifluoromethane	0.00949		0.000500	mg/kg wet	0.0100		94.9	80-120		
Naphthalene	0.0124		0.000500	mg/kg wet	0.0100		124	80-120		
Hexachlorobutadiene	0.0110		0.000500	mg/kg wet	0.0100		110	80-120		
Isopropylbenzene	0.0108		0.000500	mg/kg wet	0.0100		108	80-120		
m+p-Xylene	0.0222		0.000500	mg/kg wet	0.0200		111	80-120		
Methyl ethyl ketone (MEK)	0.0133		0.00250	mg/kg wet	0.0100		133	80-120		
Methyl isobutyl ketone (MIBK)	0.0116		0.00250	mg/kg wet	0.0100		116	80-120		
Chlorobenzene	0.0108		0.000500	mg/kg wet	0.0100		108	80-120		
Dibromomethane	0.00982		0.000500	mg/kg wet	0.0100		98.2	80-120		
Carbon Tetrachloride	0.0111		0.000500	mg/kg wet	0.0100		111	80-120		
Surrogate: 4-Bromofluorobenzene			*25.7*	*ug/L*	*25.0*		*103*	*70-130*		
Surrogate: Toluene-d8			*24.8*	*ug/L*	*25.0*		*99.1*	*70-130*		
Surrogate: 1,2-Dichlorobenzene-d4			*18.2*	*ug/L*	*19.0*		*95.7*	*70-130*		

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0741 - VOC (Continued)										
Matrix Spike (BAG0741-MS1)	**Source: MAG0582-01**				Prepared & Analyzed: 7/24/2020					
1,2,3-Trichlorobenzene	0.494		0.0230	mg/kg dry	0.460	ND	107	70-130		
Trichlorofluoromethane	0.436		0.0230	mg/kg dry	0.460	ND	94.9	70-130		
Vinyl Chloride	0.459		0.0230	mg/kg dry	0.460	ND	99.9	70-130		
1,1,1-Trichloroethane	0.453		0.0230	mg/kg dry	0.460	ND	98.5	70-130		
1,1,2,2-Tetrachloroethane	0.407		0.0230	mg/kg dry	0.460	ND	88.6	70-130		
1,1,2-Trichloroethane	0.458		0.0230	mg/kg dry	0.460	ND	99.5	70-130		
1,1-Dichloroethane	0.438		0.0230	mg/kg dry	0.460	ND	95.3	70-130		
1,2-Dichlorobenzene	0.438		0.0230	mg/kg dry	0.460	ND	95.2	70-130		
1,1-dichloropropene	0.464		0.0230	mg/kg dry	0.460	ND	101	70-130		
Toluene	0.443		0.0230	mg/kg dry	0.460	ND	96.4	70-130		
1,2,3-Trichloropropane	0.434		0.0230	mg/kg dry	0.460	ND	94.3	70-130		
1,2,4-Trichlorobenzene	0.491		0.0230	mg/kg dry	0.460	ND	107	70-130		
1,2,4-Trimethylbenzene	0.469		0.0230	mg/kg dry	0.460	ND	102	70-130		
1,2-Dibromo-3-chloropropane(DBCP)	0.422		0.0230	mg/kg dry	0.460	ND	91.7	70-130		
1,2-Dibromoethane (EDB)	0.458		0.0230	mg/kg dry	0.460	ND	99.6	70-130		
1,1-Dichloroethene	0.460		0.0230	mg/kg dry	0.460	ND	100	70-130		
o-Xylene	0.449		0.0230	mg/kg dry	0.460	ND	97.7	70-130		
1,1,1,2-Tetrachloroethane	0.429		0.0230	mg/kg dry	0.460	ND	93.2	70-130		
Methyl isobutyl ketone (MIBK)	0.393		0.115	mg/kg dry	0.460	ND	85.5	70-130		
methyl-t-butyl ether (MTBE)	0.408		0.0230	mg/kg dry	0.460	ND	88.7	70-130		
Naphthalene	0.479		0.0230	mg/kg dry	0.460	ND	104	70-130		
n-Butylbenzene	0.474		0.0230	mg/kg dry	0.460	ND	103	70-130		
trans-1,3-Dichloropropene	0.495		0.0230	mg/kg dry	0.460	ND	108	70-130		
n-Propylbenzene	0.459		0.0230	mg/kg dry	0.460	ND	99.9	70-130		
p-isopropyltoluene	0.471		0.0230	mg/kg dry	0.460	ND	102	70-130		
sec-Butylbenzene	0.478		0.0230	mg/kg dry	0.460	ND	104	70-130		
Styrene	0.442		0.0230	mg/kg dry	0.460	ND	96.1	70-130		
tert-Butylbenzene	0.471		0.0230	mg/kg dry	0.460	ND	102	70-130		
Tetrachloroethene	0.488		0.0230	mg/kg dry	0.460	ND	106	70-130		
Trichloroethene	0.439		0.0230	mg/kg dry	0.460	ND	95.4	70-130		
Methyl ethyl ketone (MEK)	0.587		0.115	mg/kg dry	0.460	ND	128	70-130		
Dibromomethane	0.429		0.0230	mg/kg dry	0.460	ND	93.4	70-130		
Bromoform	0.389		0.0230	mg/kg dry	0.460	ND	84.6	70-130		
Carbon disulfide	0.541		0.0230	mg/kg dry	0.460	ND	118	70-130		
Carbon Tetrachloride	0.448		0.0230	mg/kg dry	0.460	ND	97.4	70-130		
Chlorobenzene	0.452		0.0230	mg/kg dry	0.460	ND	98.2	70-130		
Isopropylbenzene	0.466		0.0230	mg/kg dry	0.460	ND	101	70-130		
Chloroform	0.417		0.0230	mg/kg dry	0.460	ND	90.7	70-130		
Bromodichloromethane	0.419		0.0230	mg/kg dry	0.460	ND	91.2	70-130		
Dibromochloromethane	0.438		0.0230	mg/kg dry	0.460	ND	95.2	70-130		
Chloroethane	0.409		0.0230	mg/kg dry	0.460	ND	89.0	70-130		
Dichlorodifluoromethane	0.372		0.0230	mg/kg dry	0.460	ND	81.0	70-130		
Ethylbenzene	0.460		0.0230	mg/kg dry	0.460	ND	100	70-130		
Hexachlorobutadiene	0.533		0.0230	mg/kg dry	0.460	ND	116	70-130		
trans-1,2-Dichloroethene	0.439		0.0230	mg/kg dry	0.460	ND	95.5	70-130		
m+p-Xylene	0.904		0.0230	mg/kg dry	0.920	ND	98.3	70-130		
cis-1,3-Dichloropropene	0.458		0.0230	mg/kg dry	0.460	ND	99.6	70-130		
1,3-Dichlorobenzene	0.477		0.0230	mg/kg dry	0.460	ND	104	70-130		
1,2-Dichloroethane	0.420		0.0230	mg/kg dry	0.460	ND	91.4	70-130		
1,2-Dichloropropane	0.439		0.0230	mg/kg dry	0.460	ND	95.4	70-130		
cis-1,2-dichloroethene	0.450		0.0230	mg/kg dry	0.460	ND	97.8	70-130		
1,3,5-Trimethylbenzene	0.467		0.0230	mg/kg dry	0.460	ND	102	70-130		
1,3-Dichloropropane	0.461		0.0230	mg/kg dry	0.460	ND	100	70-130		

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0741 - VOC (Continued)										
Matrix Spike (BAG0741-MS1)	**Source: MAG0582-01**				Prepared & Analyzed: 7/24/2020					
1,4-Dichlorobenzene	0.449		0.0230	mg/kg dry	0.460	ND	97.7	70-130		
2,2-Dichloropropane	0.439		0.0230	mg/kg dry	0.460	ND	95.4	70-130		
2-Chlorotoluene	0.478		0.0230	mg/kg dry	0.460	ND	104	70-130		
4-Chlorotoluene	0.482		0.0230	mg/kg dry	0.460	ND	105	70-130		
Acrylonitrile	0.432		0.0230	mg/kg dry	0.460	ND	93.9	70-130		
Benzene	0.452		0.0230	mg/kg dry	0.460	ND	98.2	70-130		
Bromobenzene	0.454		0.0230	mg/kg dry	0.460	ND	98.7	70-130		
2-hexanone	0.476		0.115	mg/kg dry	0.460	ND	104	70-130		
Bromochloromethane	0.447		0.0230	mg/kg dry	0.460	ND	97.2	70-130		
Surrogate: Toluene-d8			*24.2*	*ug/L*	*25.0*		*96.8*	*70-130*		
Surrogate: 4-Bromofluorobenzene			*25.0*	*ug/L*	*25.0*		*99.9*	*70-130*		
Surrogate: 1,2-Dichlorobenzene-d4			*18.6*	*ug/L*	*19.0*		*97.9*	*70-130*		
Matrix Spike Dup (BAG0741-MSD1)	**Source: MAG0582-01**				Prepared & Analyzed: 7/24/2020					
Trichloroethene	0.434		0.0230	mg/kg dry	0.460	ND	94.4	70-130	1.05	25
p-isopropyltoluene	0.468		0.0230	mg/kg dry	0.460	ND	102	70-130	0.784	25
sec-Butylbenzene	0.470		0.0230	mg/kg dry	0.460	ND	102	70-130	1.65	25
Styrene	0.440		0.0230	mg/kg dry	0.460	ND	95.6	70-130	0.522	25
tert-Butylbenzene	0.469		0.0230	mg/kg dry	0.460	ND	102	70-130	0.587	25
Tetrachloroethene	0.469		0.0230	mg/kg dry	0.460	ND	102	70-130	4.03	25
Toluene	0.430		0.0230	mg/kg dry	0.460	ND	93.5	70-130	3.05	25
Vinyl Chloride	0.445		0.0230	mg/kg dry	0.460	ND	96.8	70-130	3.15	25
trans-1,3-Dichloropropene	0.531		0.0230	mg/kg dry	0.460	ND	115	70-130	7.00	25
Trichlorofluoromethane	0.401		0.0230	mg/kg dry	0.460	ND	87.3	70-130	8.34	25
Carbon Tetrachloride	0.423		0.0230	mg/kg dry	0.460	ND	92.1	70-130	5.59	25
Chlorobenzene	0.447		0.0230	mg/kg dry	0.460	ND	97.3	70-130	0.921	25
o-Xylene	0.452		0.0230	mg/kg dry	0.460	ND	98.2	70-130	0.510	25
trans-1,2-Dichloroethene	0.401		0.0230	mg/kg dry	0.460	ND	87.3	70-130	8.97	25
Hexachlorobutadiene	0.512		0.0230	mg/kg dry	0.460	ND	111	70-130	3.96	25
1,1,1,2-Tetrachloroethane	0.424		0.0230	mg/kg dry	0.460	ND	92.2	70-130	1.08	25
Carbon disulfide	0.542		0.0230	mg/kg dry	0.460	ND	118	70-130	0.170	25
Chloroform	0.393		0.0230	mg/kg dry	0.460	ND	85.4	70-130	6.02	25
cis-1,3-Dichloropropene	0.480		0.0230	mg/kg dry	0.460	ND	104	70-130	4.61	25
Dibromochloromethane	0.459		0.0230	mg/kg dry	0.460	ND	99.8	70-130	4.72	25
Dibromomethane	0.404		0.0230	mg/kg dry	0.460	ND	87.8	70-130	6.18	25
cis-1,2-dichloroethene	0.429		0.0230	mg/kg dry	0.460	ND	93.2	70-130	4.82	25
Ethylbenzene	0.456		0.0230	mg/kg dry	0.460	ND	99.2	70-130	0.803	25
n-Propylbenzene	0.457		0.0230	mg/kg dry	0.460	ND	99.3	70-130	0.602	25
Isopropylbenzene	0.463		0.0230	mg/kg dry	0.460	ND	101	70-130	0.792	25
m+p-Xylene	0.891		0.0230	mg/kg dry	0.920	ND	96.9	70-130	1.49	25
Methyl ethyl ketone (MEK)	0.568		0.115	mg/kg dry	0.460	ND	124	70-130	3.27	25
Methyl isobutyl ketone (MIBK)	0.424		0.115	mg/kg dry	0.460	ND	92.3	70-130	7.65	25
methyl-t-butyl ether (MTBE)	0.419		0.0230	mg/kg dry	0.460	ND	91.1	70-130	2.67	25
Naphthalene	0.538		0.0230	mg/kg dry	0.460	ND	117	70-130	11.6	25
n-Butylbenzene	0.461		0.0230	mg/kg dry	0.460	ND	100	70-130	2.66	25
Dichlorodifluoromethane	0.344		0.0230	mg/kg dry	0.460	ND	74.8	70-130	7.96	25
1,2,3-Trichlorobenzene	0.532		0.0230	mg/kg dry	0.460	ND	116	70-130	7.53	25
1,2-Dichlorobenzene	0.435		0.0230	mg/kg dry	0.460	ND	94.7	70-130	0.527	25
1,2-Dibromoethane (EDB)	0.473		0.0230	mg/kg dry	0.460	ND	103	70-130	3.16	25
1,2-Dibromo-3-chloropropane(DBCP)	0.457		0.0230	mg/kg dry	0.460	ND	99.3	70-130	7.96	25
1,2,4-Trimethylbenzene	0.454		0.0230	mg/kg dry	0.460	ND	98.7	70-130	3.29	25
1,1,2,2-Tetrachloroethane	0.424		0.0230	mg/kg dry	0.460	ND	92.2	70-130	3.98	25

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0741 - VOC (Continued)										
Matrix Spike Dup (BAG0741-MSD1)	**Source: MAG0582-01**				Prepared & Analyzed: 7/24/2020					
1,2,3-Trichloropropane	0.460		0.0230	mg/kg dry	0.460	ND	100	70-130	5.87	25
1,3,5-Trimethylbenzene	0.467		0.0230	mg/kg dry	0.460	ND	102	70-130	0.0985	25
1,1-dichloropropene	0.476		0.0230	mg/kg dry	0.460	ND	104	70-130	2.44	25
1,1-Dichloroethene	0.453		0.0230	mg/kg dry	0.460	ND	98.6	70-130	1.41	25
1,1-Dichloroethane	0.423		0.0230	mg/kg dry	0.460	ND	92.0	70-130	3.52	25
1,1,2-Trichloroethane	0.486		0.0230	mg/kg dry	0.460	ND	106	70-130	6.04	25
1,1,1-Trichloroethane	0.432		0.0230	mg/kg dry	0.460	ND	93.9	70-130	4.78	25
Chloroethane	0.392		0.0230	mg/kg dry	0.460	ND	85.2	70-130	4.36	25
1,2,4-Trichlorobenzene	0.511		0.0230	mg/kg dry	0.460	ND	111	70-130	4.13	25
2-Chlorotoluene	0.464		0.0230	mg/kg dry	0.460	ND	101	70-130	2.93	25
Bromodichloromethane	0.407		0.0230	mg/kg dry	0.460	ND	88.5	70-130	3.01	25
Bromochloromethane	0.422		0.0230	mg/kg dry	0.460	ND	91.7	70-130	5.82	25
Bromobenzene	0.443		0.0230	mg/kg dry	0.460	ND	96.3	70-130	2.46	25
Benzene	0.451		0.0230	mg/kg dry	0.460	ND	98.0	70-130	0.204	25
Acrylonitrile	0.430		0.0230	mg/kg dry	0.460	ND	93.5	70-130	0.427	25
4-Chlorotoluene	0.477		0.0230	mg/kg dry	0.460	ND	104	70-130	0.959	25
1,2-Dichloroethane	0.405		0.0230	mg/kg dry	0.460	ND	88.0	70-130	3.79	25
2-hexanone	0.466		0.115	mg/kg dry	0.460	ND	101	70-130	2.15	25
1,2-Dichloropropane	0.442		0.0230	mg/kg dry	0.460	ND	96.2	70-130	0.835	25
2,2-Dichloropropane	0.422		0.0230	mg/kg dry	0.460	ND	91.7	70-130	3.96	25
1,4-Dichlorobenzene	0.449		0.0230	mg/kg dry	0.460	ND	97.6	70-130	0.102	25
1,3-Dichloropropane	0.490		0.0230	mg/kg dry	0.460	ND	106	70-130	6.00	25
1,3-Dichlorobenzene	0.474		0.0230	mg/kg dry	0.460	ND	103	70-130	0.580	25
Bromoform	0.408		0.0230	mg/kg dry	0.460	ND	88.8	70-130	4.84	25
Surrogate: Toluene-d8			*23.7*	*ug/L*	*25.0*		*94.7*	*70-130*		
Surrogate: 4-Bromofluorobenzene			*24.8*	*ug/L*	*25.0*		*99.1*	*70-130*		
Surrogate: 1,2-Dichlorobenzene-d4			*18.7*	*ug/L*	*19.0*		*98.4*	*70-130*		

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0765 - VOC										
Blank (BAG0765-BLK1)					Prepared & Analyzed: 7/23/2020					
1,2-Dichloropropane	ND		0.500	ug/L						
Dibromomethane	ND		0.500	ug/L						
Chlorobenzene	ND		0.500	ug/L						
Methyl isobutyl ketone (MIBK)	ND		2.50	ug/L						
Methyl ethyl ketone (MEK)	ND		2.50	ug/L						
m+p-Xylene	ND		0.500	ug/L						
Isopropylbenzene	ND		0.500	ug/L						
Hexachlorobutadiene	ND		0.500	ug/L						
n-Butylbenzene	ND		0.500	ug/L						
Dichlorodifluoromethane	ND		0.500	ug/L						
n-Propylbenzene	ND		0.500	ug/L						
Dibromochloromethane	ND		0.500	ug/L						
cis-1,3-Dichloropropene	ND		0.500	ug/L						
cis-1,2-dichloroethene	ND		0.500	ug/L						
Chloromethane	ND		0.500	ug/L						
Chloroform	ND		0.500	ug/L						
Chloroethane	ND		0.500	ug/L						
Ethylbenzene	ND		0.500	ug/L						
Toluene	ND		0.500	ug/L						
1,1,1,2-Tetrachloroethane	ND		0.500	ug/L						
Vinyl Chloride	ND		0.500	ug/L						
Trichlorofluoromethane	ND		0.500	ug/L						
Trichloroethene	ND		0.500	ug/L						
trans-1,3-Dichloropropene	ND		0.500	ug/L						
methyl-t-butyl ether (MTBE)	ND		0.500	ug/L						
Methylene chloride	ND		2.50	ug/L						
Tetrachloroethene	ND		0.500	ug/L						
tert-Butylbenzene	ND		0.500	ug/L						
Styrene	ND		0.500	ug/L						
sec-Butylbenzene	ND		0.500	ug/L						
p-isopropyltoluene	ND		0.500	ug/L						
o-Xylene	ND		0.500	ug/L						
trans-1,2-Dichloroethene	ND		0.500	ug/L						
1,2,3-Trichloropropane	ND		0.500	ug/L						
1,3-Dichlorobenzene	ND		0.500	ug/L						
1,3,5-Trimethylbenzene	ND		0.500	ug/L						
1,2-Dichloroethane	ND		0.500	ug/L						
1,2-Dichlorobenzene	ND		0.500	ug/L						
1,2-Dibromoethane (EDB)	ND		0.500	ug/L						
1,2-Dibromo-3-chloropropane(DBCP)	ND		0.500	ug/L						
1,3-Dichloropropane	ND		0.500	ug/L						
1,2,4-Trichlorobenzene	ND		0.500	ug/L						
1,1,2-Trichloroethane	ND		0.500	ug/L						
1,2,3-Trichlorobenzene	ND		0.500	ug/L						
1,1-dichloropropene	ND		0.500	ug/L						
1,1-Dichloroethene	ND		0.500	ug/L						
1,1-Dichloroethane	ND		0.500	ug/L						
Carbon Tetrachloride	ND		0.500	ug/L						
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L						
Naphthalene	ND		0.500	ug/L						
1,2,4-Trimethylbenzene	ND		0.500	ug/L						
Bromomethane	ND		0.500	ug/L						
1,1,1-Trichloroethane	ND		0.500	ug/L						

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0765 - VOC (Continued)										
Blank (BAG0765-BLK1)					Prepared & Analyzed: 7/23/2020					
Carbon disulfide	ND		0.500	ug/L						
Bromoform	ND		0.500	ug/L						
Bromodichloromethane	ND		0.500	ug/L						
Bromochloromethane	ND		0.500	ug/L						
Bromobenzene	ND		0.500	ug/L						
Benzene	ND		0.500	ug/L						
Acrylonitrile	ND		0.500	ug/L						
4-Chlorotoluene	ND		0.500	ug/L						
2-hexanone	ND		2.50	ug/L						
2-Chlorotoluene	ND		0.500	ug/L						
2,2-Dichloropropane	ND		0.500	ug/L						
Acetone	ND		2.50	ug/L						
1,4-Dichlorobenzene	ND		0.500	ug/L						
Surrogate: Toluene-d8			*26.7*	*ug/L*	*25.0*		*107*	*70-130*		
Surrogate: 4-Bromofluorobenzene			*21.6*	*ug/L*	*25.0*		*86.4*	*70-130*		
Surrogate: 1,2-Dichlorobenzene-d4			*22.3*	*ug/L*	*19.0*		*117*	*70-130*		
LCS (BAG0765-BS1)					Prepared & Analyzed: 7/23/2020					
cis-1,3-Dichloropropene	10.9		0.500	ug/L	10.0		109	80-120		
methyl-t-butyl ether (MTBE)	10.2		0.500	ug/L	10.0		102	80-120		
Methyl isobutyl ketone (MIBK)	11.0		2.50	ug/L	10.0		110	80-120		
Methyl ethyl ketone (MEK)	12.8	L1	2.50	ug/L	10.0		128	80-120		
m+p-Xylene	21.2		0.500	ug/L	20.0		106	80-120		
Isopropylbenzene	10.6		0.500	ug/L	10.0		106	80-120		
Hexachlorobutadiene	10.5		0.500	ug/L	10.0		105	80-120		
Ethylbenzene	10.7		0.500	ug/L	10.0		107	80-120		
Dichlorodifluoromethane	10.3		0.500	ug/L	10.0		103	80-120		
Chloroform	9.74		0.500	ug/L	10.0		97.4	80-120		
Dibromochloromethane	11.3		0.500	ug/L	10.0		113	80-120		
cis-1,2-dichloroethene	9.57		0.500	ug/L	10.0		95.7	80-120		
Naphthalene	11.7		0.500	ug/L	10.0		117	80-120		
Chloroethane	9.96		0.500	ug/L	10.0		99.6	80-120		
Toluene	10.4		0.500	ug/L	10.0		104	80-120		
Dibromomethane	9.76		0.500	ug/L	10.0		97.6	80-120		
Chlorobenzene	10.5		0.500	ug/L	10.0		105	80-120		
Bromoform	11.0		0.500	ug/L	10.0		110	80-120		
Vinyl Chloride	10.2		0.500	ug/L	10.0		102	80-120		
Trichlorofluoromethane	10.6		0.500	ug/L	10.0		106	80-120		
Trichloroethene	10.2		0.500	ug/L	10.0		102	80-120		
trans-1,3-Dichloropropene	11.7		0.500	ug/L	10.0		117	80-120		
tert-Butylbenzene	10.9		0.500	ug/L	10.0		109	80-120		
n-Butylbenzene	11.1		0.500	ug/L	10.0		111	80-120		
Tetrachloroethene	11.0		0.500	ug/L	10.0		110	80-120		
Styrene	10.4		0.500	ug/L	10.0		104	80-120		
sec-Butylbenzene	10.9		0.500	ug/L	10.0		109	80-120		
p-isopropyltoluene	10.9		0.500	ug/L	10.0		109	80-120		
o-Xylene	10.5		0.500	ug/L	10.0		105	80-120		
n-Propylbenzene	10.9		0.500	ug/L	10.0		109	80-120		
trans-1,2-Dichloroethene	9.97		0.500	ug/L	10.0		99.7	80-120		
1,1-Dichloroethene	10.5		0.500	ug/L	10.0		105	80-120		
1,2-Dichloroethane	10.2		0.500	ug/L	10.0		102	80-120		
1,2-Dichlorobenzene	9.97		0.500	ug/L	10.0		99.7	80-120		

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0765 - VOC (Continued)										
LCS (BAG0765-BS1)					Prepared & Analyzed: 7/23/2020					
1,2-Dibromoethane (EDB)	11.3		0.500	ug/L	10.0		113	70-130		
1,2-Dibromo-3-chloropropane(DBCP)	11.7		0.500	ug/L	10.0		117	80-120		
1,2,4-Trichlorobenzene	10.4		0.500	ug/L	10.0		104	80-120		
1,2-Dichloropropane	10.8		0.500	ug/L	10.0		108	80-120		
1,1-dichloropropene	11.3		0.500	ug/L	10.0		113	80-120		
1,2,4-Trimethylbenzene	10.8		0.500	ug/L	10.0		108	80-120		
1,1-Dichloroethane	10.0		0.500	ug/L	10.0		100	80-120		
1,1,2-Trichloroethane	11.3		0.500	ug/L	10.0		113	80-120		
1,1,2,2-Tetrachloroethane	11.4		0.500	ug/L	10.0		114	80-120		
1,1,1-Trichloroethane	10.5		0.500	ug/L	10.0		105	80-120		
1,1,1,2-Tetrachloroethane	10.7		0.500	ug/L	10.0		107	80-120		
Carbon Tetrachloride	10.7		0.500	ug/L	10.0		107	80-120		
1,2,3-Trichlorobenzene	11.3		0.500	ug/L	10.0		113	80-120		
4-Chlorotoluene	11.5		0.500	ug/L	10.0		115	80-120		
Bromodichloromethane	10.2		0.500	ug/L	10.0		102	80-120		
1,2,3-Trichloropropane	11.4		0.500	ug/L	10.0		114	80-120		
1,3,5-Trimethylbenzene	10.9		0.500	ug/L	10.0		109	80-120		
Bromochloromethane	9.76		0.500	ug/L	10.0		97.6	80-120		
Bromobenzene	10.1		0.500	ug/L	10.0		101	80-120		
Acrylonitrile	11.0		0.500	ug/L	10.0		110	80-120		
2-hexanone	12.1	L1	2.50	ug/L	10.0		121	80-120		
Carbon disulfide	9.83		0.500	ug/L	10.0		98.3	80-120		
2-Chlorotoluene	11.3		0.500	ug/L	10.0		113	80-120		
2,2-Dichloropropane	10.2		0.500	ug/L	10.0		102	80-120		
1,4-Dichlorobenzene	10.3		0.500	ug/L	10.0		103	80-120		
1,3-Dichloropropane	11.6		0.500	ug/L	10.0		116	80-120		
1,3-Dichlorobenzene	10.6		0.500	ug/L	10.0		106	80-120		
Benzene	10.6		0.500	ug/L	10.0		106	80-120		
Surrogate: Toluene-d8			*24.6*	*ug/L*	*25.0*		*98.2*	*70-130*		
Surrogate: 4-Bromofluorobenzene			*25.2*	*ug/L*	*25.0*		*101*	*70-130*		
Surrogate: 1,2-Dichlorobenzene-d4			*18.1*	*ug/L*	*19.0*		*95.1*	*70-130*		

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0765 - VOC (Continued)										
Matrix Spike (BAG0765-MS1)	**Source: MAG0582-23**				Prepared & Analyzed: 7/23/2020					
1,3-Dichlorobenzene	10.3		0.500	ug/L	10.0	ND	103	70-130		
Bromodichloromethane	10.5		0.500	ug/L	10.0	ND	105	70-130		
2-Chlorotoluene	10.8		0.500	ug/L	10.0	ND	108	70-130		
1,3-Dichloropropane	9.23		0.500	ug/L	10.0	ND	92.3	70-130		
1,4-Dichlorobenzene	9.88		0.500	ug/L	10.0	ND	98.8	70-130		
Bromoform	9.10		0.500	ug/L	10.0	ND	91.0	70-130		
2,2-Dichloropropane	10.6		0.500	ug/L	10.0	ND	106	70-130		
2-hexanone	9.71		2.50	ug/L	10.0	ND	97.1	70-130		
4-Chlorotoluene	10.1		0.500	ug/L	10.0	ND	101	70-130		
Acrylonitrile	10.2		0.500	ug/L	10.0	ND	102	70-130		
Benzene	10.3		0.500	ug/L	10.0	ND	103	70-130		
Bromochloromethane	11.7		0.500	ug/L	10.0	ND	117	70-130		
1,3,5-Trimethylbenzene	5.12	M2	0.500	ug/L	10.0	ND	51.2	70-130		
1,1,2,2-Tetrachloroethane	9.89		0.500	ug/L	10.0	ND	98.9	70-130		
Bromobenzene	9.93		0.500	ug/L	10.0	ND	99.3	70-130		
1,2,4-Trichlorobenzene	9.81		0.500	ug/L	10.0	ND	98.1	70-130		
1,1,1-Trichloroethane	11.0		0.500	ug/L	10.0	ND	110	70-130		
n-Butylbenzene	9.43		0.500	ug/L	10.0	ND	94.3	70-130		
1,1,2-Trichloroethane	8.72		0.500	ug/L	10.0	ND	87.2	70-130		
Carbon disulfide	12.8		0.500	ug/L	10.0	ND	128	70-130		
1,1-Dichloroethene	11.3		0.500	ug/L	10.0	ND	113	70-130		
1,1-dichloropropene	8.93		0.500	ug/L	10.0	ND	89.3	70-130		
1,1-Dichloroethane	11.9		0.500	ug/L	10.0	ND	119	70-130		
1,2,3-Trichloropropane	9.94		0.500	ug/L	10.0	ND	99.4	70-130		
1,2-Dichloropropane	9.76		0.500	ug/L	10.0	ND	97.6	70-130		
1,2,4-Trimethylbenzene	7.59		0.500	ug/L	10.0	ND	75.9	70-130		
1,2-Dibromo-3-chloropropane(DBCP)	9.68		0.500	ug/L	10.0	ND	96.8	70-130		
1,2-Dibromoethane (EDB)	9.29		0.500	ug/L	10.0	ND	92.9	70-130		
1,2-Dichlorobenzene	9.62		0.500	ug/L	10.0	ND	96.2	70-130		
1,2-Dichloroethane	11.1		0.500	ug/L	10.0	ND	111	70-130		
1,2,3-Trichlorobenzene	10.4		0.500	ug/L	10.0	ND	104	70-130		
Toluene	10.4		0.500	ug/L	10.0	ND	104	70-130		
methyl-t-butyl ether (MTBE)	7.53		0.500	ug/L	10.0	ND	75.3	70-130		
o-Xylene	7.66		0.500	ug/L	10.0	ND	76.6	70-130		
p-isopropyltoluene	10.2		0.500	ug/L	10.0	ND	102	70-130		
sec-Butylbenzene	9.61		0.500	ug/L	10.0	ND	96.1	70-130		
Styrene	3.63	M2	0.500	ug/L	10.0	ND	36.3	70-130		
1,1,1,2-Tetrachloroethane	8.91		0.500	ug/L	10.0	ND	89.1	70-130		
Tetrachloroethene	9.07		0.500	ug/L	10.0	ND	90.7	70-130		
Naphthalene	9.81		0.500	ug/L	10.0	ND	98.1	70-130		
trans-1,2-Dichloroethene	11.1		0.500	ug/L	10.0	ND	111	70-130		
trans-1,3-Dichloropropene	8.68		0.500	ug/L	10.0	ND	86.8	70-130		
Trichloroethene	9.17		0.500	ug/L	10.0	ND	91.7	70-130		
Trichlorofluoromethane	12.4		0.500	ug/L	10.0	ND	124	70-130		
Vinyl Chloride	11.3		0.500	ug/L	10.0	ND	113	70-130		
tert-Butylbenzene	10.4		0.500	ug/L	10.0	ND	104	70-130		
Dichlorodifluoromethane	11.6		0.500	ug/L	10.0	ND	116	70-130		
Chlorobenzene	9.92		0.500	ug/L	10.0	ND	99.2	70-130		
Chloroethane	12.8		0.500	ug/L	10.0	ND	128	70-130		
Chloroform	11.8		0.500	ug/L	10.0	ND	118	70-130		
cis-1,2-dichloroethene	11.2		0.500	ug/L	10.0	ND	112	70-130		
cis-1,3-Dichloropropene	9.15		0.500	ug/L	10.0	ND	91.5	70-130		
n-Propylbenzene	9.32		0.500	ug/L	10.0	ND	93.2	70-130		

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0765 - VOC (Continued)										
Matrix Spike (BAG0765-MS1)	**Source: MAG0582-23**				Prepared & Analyzed: 7/23/2020					
Dibromomethane	11.0		0.500	ug/L	10.0	ND	110	70-130		
Carbon Tetrachloride	10.6		0.500	ug/L	10.0	ND	106	70-130		
Ethylbenzene	9.06		0.500	ug/L	10.0	ND	90.6	70-130		
Hexachlorobutadiene	10.5		0.500	ug/L	10.0	ND	105	70-130		
Isopropylbenzene	9.33		0.500	ug/L	10.0	ND	93.3	70-130		
m+p-Xylene	15.3		0.500	ug/L	20.0	ND	76.5	70-130		
Methyl ethyl ketone (MEK)	9.91		2.50	ug/L	10.0	ND	99.1	70-130		
Methyl isobutyl ketone (MIBK)	9.58		2.50	ug/L	10.0	ND	95.8	70-130		
Dibromochloromethane	9.31		0.500	ug/L	10.0	ND	93.1	70-130		
Surrogate: 4-Bromofluorobenzene			*26.1*	*ug/L*	*25.0*		*104*	*70-130*		
Surrogate: Toluene-d8			*26.6*	*ug/L*	*25.0*		*106*	*70-130*		
Surrogate: 1,2-Dichlorobenzene-d4			*18.2*	*ug/L*	*19.0*		*95.7*	*70-130*		
Matrix Spike Dup (BAG0765-MSD1)	**Source: MAG0582-23**				Prepared & Analyzed: 7/23/2020					
1,2-Dibromo-3-chloropropane(DBCP)	10.7		0.500	ug/L	10.0	ND	107	70-130	10.3	25
Carbon Tetrachloride	11.5		0.500	ug/L	10.0	ND	115	70-130	8.23	25
Ethylbenzene	9.48		0.500	ug/L	10.0	ND	94.8	70-130	4.53	25
4-Chlorotoluene	11.4		0.500	ug/L	10.0	ND	114	70-130	12.4	25
Acrylonitrile	10.5		0.500	ug/L	10.0	ND	105	70-130	3.08	25
Benzene	10.8		0.500	ug/L	10.0	ND	108	70-130	4.47	25
Bromobenzene	11.0		0.500	ug/L	10.0	ND	110	70-130	9.95	25
Bromochloromethane	10.7		0.500	ug/L	10.0	ND	107	70-130	8.49	25
Bromodichloromethane	10.9		0.500	ug/L	10.0	ND	109	70-130	4.21	25
2-Chlorotoluene	11.7		0.500	ug/L	10.0	ND	117	70-130	7.91	25
Carbon disulfide	12.2		0.500	ug/L	10.0	ND	122	70-130	5.60	25
2,2-Dichloropropane	11.2		0.500	ug/L	10.0	ND	112	70-130	5.88	25
Chlorobenzene	10.4		0.500	ug/L	10.0	ND	104	70-130	5.01	25
Chloroethane	11.2		0.500	ug/L	10.0	ND	112	70-130	13.5	25
Chloroform	10.8		0.500	ug/L	10.0	ND	108	70-130	8.85	25
cis-1,2-dichloroethene	10.7		0.500	ug/L	10.0	ND	107	70-130	4.85	25
cis-1,3-Dichloropropene	9.67		0.500	ug/L	10.0	ND	96.7	70-130	5.53	25
Dibromochloromethane	9.67		0.500	ug/L	10.0	ND	96.7	70-130	3.79	25
Dibromomethane	10.6		0.500	ug/L	10.0	ND	106	70-130	3.81	25
1,2-Dichlorobenzene	9.97		0.500	ug/L	10.0	ND	99.7	70-130	3.57	25
Bromoform	9.65		0.500	ug/L	10.0	ND	96.5	70-130	5.87	25
1,2,4-Trimethylbenzene	8.26		0.500	ug/L	10.0	ND	82.6	70-130	8.45	25
1,1,1,2-Tetrachloroethane	9.57		0.500	ug/L	10.0	ND	95.7	70-130	7.14	25
1,1,1-Trichloroethane	11.5		0.500	ug/L	10.0	ND	115	70-130	3.91	25
1,1,2,2-Tetrachloroethane	10.8		0.500	ug/L	10.0	ND	108	70-130	8.43	25
1,1,2-Trichloroethane	9.46		0.500	ug/L	10.0	ND	94.6	70-130	8.14	25
1,1-Dichloroethane	11.3		0.500	ug/L	10.0	ND	113	70-130	5.00	25
1,1-Dichloroethene	10.8		0.500	ug/L	10.0	ND	108	70-130	4.36	25
1,1-dichloropropene	9.83		0.500	ug/L	10.0	ND	98.3	70-130	9.59	25
1,2,3-Trichlorobenzene	11.3		0.500	ug/L	10.0	ND	113	70-130	8.30	25
2-hexanone	11.0		2.50	ug/L	10.0	ND	110	70-130	12.3	25
1,2,4-Trichlorobenzene	10.6		0.500	ug/L	10.0	ND	106	70-130	7.46	25
Hexachlorobutadiene	11.3		0.500	ug/L	10.0	ND	113	70-130	7.61	25
1,2-Dibromoethane (EDB)	9.89		0.500	ug/L	10.0	ND	98.9	70-130	6.26	25
1,2-Dichloroethane	11.0		0.500	ug/L	10.0	ND	110	70-130	0.726	25
1,2-Dichloropropane	10.7		0.500	ug/L	10.0	ND	107	70-130	9.38	25
1,3,5-Trimethylbenzene	5.38	M2	0.500	ug/L	10.0	ND	53.8	70-130	4.95	25
1,3-Dichlorobenzene	10.7		0.500	ug/L	10.0	ND	107	70-130	4.00	25

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0765 - VOC (Continued)										
Matrix Spike Dup (BAG0765-MSD1)	**Source: MAG0582-23**				Prepared & Analyzed: 7/23/2020					
1,3-Dichloropropane	9.62		0.500	ug/L	10.0	ND	96.2	70-130	4.14	25
1,4-Dichlorobenzene	10.4		0.500	ug/L	10.0	ND	104	70-130	5.22	25
1,2,3-Trichloropropane	10.8		0.500	ug/L	10.0	ND	108	70-130	8.66	25
p-isopropyltoluene	11.1		0.500	ug/L	10.0	ND	111	70-130	7.99	25
Vinyl Chloride	10.6		0.500	ug/L	10.0	ND	106	70-130	6.32	25
Trichlorofluoromethane	11.8		0.500	ug/L	10.0	ND	118	70-130	4.62	25
Trichloroethene	10.0		0.500	ug/L	10.0	ND	100	70-130	9.06	25
trans-1,3-Dichloropropene	9.31		0.500	ug/L	10.0	ND	93.1	70-130	7.00	25
trans-1,2-Dichloroethene	10.9		0.500	ug/L	10.0	ND	109	70-130	1.91	25
Toluene	10.4		0.500	ug/L	10.0	ND	104	70-130	0.866	25
Tetrachloroethene	9.43		0.500	ug/L	10.0	ND	94.3	70-130	3.89	25
tert-Butylbenzene	11.3		0.500	ug/L	10.0	ND	113	70-130	8.51	25
Isopropylbenzene	9.70		0.500	ug/L	10.0	ND	97.0	70-130	3.89	25
sec-Butylbenzene	10.8		0.500	ug/L	10.0	ND	108	70-130	11.2	25
o-Xylene	7.94		0.500	ug/L	10.0	ND	79.4	70-130	3.59	25
n-Propylbenzene	10.4		0.500	ug/L	10.0	ND	104	70-130	10.6	25
n-Butylbenzene	9.94		0.500	ug/L	10.0	ND	99.4	70-130	5.27	25
Naphthalene	10.9		0.500	ug/L	10.0	ND	109	70-130	10.5	25
methyl-t-butyl ether (MTBE)	8.61		0.500	ug/L	10.0	ND	86.1	70-130	13.4	25
Methyl isobutyl ketone (MIBK)	10.2		2.50	ug/L	10.0	ND	102	70-130	6.07	25
Methyl ethyl ketone (MEK)	10.8		2.50	ug/L	10.0	ND	108	70-130	8.22	25
m+p-Xylene	16.0		0.500	ug/L	20.0	ND	80.0	70-130	4.41	25
Dichlorodifluoromethane	11.3		0.500	ug/L	10.0	ND	113	70-130	2.01	25
Styrene	3.85	M2	0.500	ug/L	10.0	ND	38.5	70-130	5.88	25
Surrogate: 4-Bromofluorobenzene			*27.2*	*ug/L*	*25.0*		*109*	*70-130*		
Surrogate: Toluene-d8			*24.7*	*ug/L*	*25.0*		*98.8*	*70-130*		
Surrogate: 1,2-Dichlorobenzene-d4			*18.2*	*ug/L*	*19.0*		*95.9*	*70-130*		

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0841 - VOC										
Blank (BAG0841-BLK1)					Prepared & Analyzed: 7/23/2020					
Gasoline	ND		0.200	mg/L						
Surrogate: 4-Bromofluorobenzene			*0.0229*	*mg/L*	*0.0250*		*91.6*	*70-130*		
LCS (BAG0841-BS1)					Prepared & Analyzed: 7/23/2020					
Gasoline	1.04		0.200	mg/L	1.00		104	80-120		
Surrogate: 4-Bromofluorobenzene			*0.0240*	*mg/L*	*0.0250*		*96.0*	*70-130*		
Matrix Spike (BAG0841-MS1)		**Source: MAG0582-24**			Prepared & Analyzed: 7/23/2020					
Gasoline	0.810		0.200	mg/L	1.00	ND	81.0	50-150		
Surrogate: 4-Bromofluorobenzene			*0.0242*	*mg/L*	*0.0250*		*96.8*	*70-130*		
Matrix Spike Dup (BAG0841-MSD1)		**Source: MAG0582-24**			Prepared & Analyzed: 7/23/2020					
Gasoline	0.820		0.200	mg/L	1.00	ND	82.0	50-150	1.23	25
Surrogate: 4-Bromofluorobenzene			*0.0241*	*mg/L*	*0.0250*		*96.4*	*70-130*		
Batch: BAG0842 - VOC										
Blank (BAG0842-BLK1)					Prepared & Analyzed: 7/24/2020					
Gasoline	ND		22.7	mg/kg wet						
Surrogate: 4-Bromofluorobenzene			*0.0222*	*mg/kg*	*0.0250*		*88.8*	*70-130*		
LCS (BAG0842-BS1)					Prepared: 7/24/2020 Analyzed: 7/25/2020					
Gasoline	0.940		0.400	mg/kg wet	1.00		94.0	80-120		
Surrogate: 4-Bromofluorobenzene			*0.0255*	*mg/kg*	*0.0250*		*102*	*70-130*		
Matrix Spike (BAG0842-MS1)		**Source: MAG0582-02**			Prepared & Analyzed: 7/24/2020					
Gasoline	42.8		16.6	mg/kg dry	41.5	ND	103	50-150		
Surrogate: 4-Bromofluorobenzene			*0.0244*	*mg/kg*	*0.0250*		*97.6*	*70-130*		

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0842 - VOC (Continued)										
Matrix Spike Dup (BAG0842-MSD1)		**Source: MAG0582-02**			Prepared & Analyzed: 7/24/2020					
Gasoline	43.6		16.6	mg/kg dry	41.5	ND	105	50-150	1.92	25
Surrogate: 4-Bromofluorobenzene			*0.0244*	*mg/kg*	*0.0250*		*97.6*	*70-130*		
Batch: BAG0843 - VOC										
Blank (BAG0843-BLK1)					Prepared & Analyzed: 7/27/2020					
Gasoline	ND		0.400	mg/kg wet						
Surrogate: 4-Bromofluorobenzene			*0.0237*	*mg/kg*	*0.0250*		*94.8*	*70-130*		
LCS (BAG0843-BS1)					Prepared & Analyzed: 7/27/2020					
Gasoline	0.980		0.400	mg/kg wet	1.00		98.0	80-120		
Surrogate: 4-Bromofluorobenzene			*0.0252*	*mg/kg*	*0.0250*		*101*	*70-130*		
Matrix Spike (BAG0843-MS1)		**Source: MAG0582-15**			Prepared & Analyzed: 7/27/2020					
Gasoline	44.9		18.3	mg/kg dry	45.8	ND	98.0	50-150		
Surrogate: 4-Bromofluorobenzene			*0.0252*	*mg/kg*	*0.0250*		*101*	*70-130*		
Matrix Spike Dup (BAG0843-MSD1)		**Source: MAG0582-15**			Prepared & Analyzed: 7/27/2020					
Gasoline	45.8		18.3	mg/kg dry	45.8	ND	100	50-150	2.02	25
Surrogate: 4-Bromofluorobenzene			*0.0255*	*mg/kg*	*0.0250*		*102*	*70-130*		
Batch: BAG0844 - VOC										
Blank (BAG0844-BLK1)					Prepared & Analyzed: 7/27/2020					
Styrene	ND		0.000500	mg/kg wet						
Chloromethane	ND		0.000500	mg/kg wet						
Acrylonitrile	ND		0.000500	mg/kg wet						
Benzene	ND		0.000500	mg/kg wet						
Bromobenzene	ND		0.000500	mg/kg wet						
Bromochloromethane	ND		0.000500	mg/kg wet						
Bromodichloromethane	ND		0.000500	mg/kg wet						
Bromoform	ND		0.000500	mg/kg wet						
Bromomethane	ND		0.000500	mg/kg wet						
Carbon disulfide	ND		0.000500	mg/kg wet						
Carbon Tetrachloride	ND		0.000500	mg/kg wet						
Chlorobenzene	ND		0.000500	mg/kg wet						
Methyl isobutyl ketone (MIBK)	ND		0.00250	mg/kg wet						
Chloroform	ND		0.000500	mg/kg wet						
2-Chlorotoluene	ND		0.000500	mg/kg wet						
cis-1,2-dichloroethene	ND		0.000500	mg/kg wet						
cis-1,3-Dichloropropene	ND		0.000500	mg/kg wet						
Dibromochloromethane	ND		0.000500	mg/kg wet						
Dibromomethane	ND		0.000500	mg/kg wet						
Dichlorodifluoromethane	ND		0.000500	mg/kg wet						
Ethylbenzene	ND		0.000500	mg/kg wet						
Hexachlorobutadiene	ND		0.000500	mg/kg wet						
Isopropylbenzene	ND		0.000500	mg/kg wet						
m+p-Xylene	ND		0.000500	mg/kg wet						
Methyl ethyl ketone (MEK)	ND		0.00250	mg/kg wet						
Chloroethane	ND		0.000500	mg/kg wet						
1,2-Dibromo-3-chloropropane(DBCP)	ND		0.000500	mg/kg wet						

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0844 - VOC (Continued)										
Blank (BAG0844-BLK1)					Prepared & Analyzed: 7/27/2020					
Tetrachloroethene	ND		0.000500	mg/kg wet						
1,1,1-Trichloroethane	ND		0.000500	mg/kg wet						
1,1,1,2-Tetrachloroethane	ND		0.000500	mg/kg wet						
1,1,2,2-Tetrachloroethane	ND		0.000500	mg/kg wet						
1,1,2-Trichloroethane	ND		0.000500	mg/kg wet						
1,1-Dichloroethane	ND		0.000500	mg/kg wet						
1,1-Dichloroethene	ND		0.000500	mg/kg wet						
1,1-dichloropropene	ND		0.000500	mg/kg wet						
1,2,3-Trichlorobenzene	ND		0.000500	mg/kg wet						
1,2,3-Trichloropropane	ND		0.000500	mg/kg wet						
Acetone	ND		0.00250	mg/kg wet						
1,2,4-Trimethylbenzene	ND		0.000500	mg/kg wet						
1,2-Dibromoethane (EDB)	ND		0.000500	mg/kg wet						
1,2-Dichlorobenzene	ND		0.000500	mg/kg wet						
1,2-Dichloroethane	ND		0.000500	mg/kg wet						
1,2-Dichloropropane	ND		0.000500	mg/kg wet						
1,3,5-Trimethylbenzene	ND		0.000500	mg/kg wet						
1,3-Dichlorobenzene	ND		0.000500	mg/kg wet						
1,3-Dichloropropane	ND		0.000500	mg/kg wet						
1,4-Dichlorobenzene	ND		0.000500	mg/kg wet						
2,2-Dichloropropane	ND		0.000500	mg/kg wet						
4-Chlorotoluene	ND		0.000500	mg/kg wet						
1,2,4-Trichlorobenzene	ND		0.000500	mg/kg wet						
Vinyl Chloride	ND		0.000500	mg/kg wet						
Methylene chloride	ND		0.00250	mg/kg wet						
2-hexanone	ND		0.00250	mg/kg wet						
Trichlorofluoromethane	ND		0.000500	mg/kg wet						
Trichloroethene	ND		0.000500	mg/kg wet						
trans-1,3-Dichloropropene	ND		0.000500	mg/kg wet						
trans-1,2-Dichloroethene	ND		0.000500	mg/kg wet						
Toluene	ND		0.000500	mg/kg wet						
sec-Butylbenzene	ND		0.000500	mg/kg wet						
p-isopropyltoluene	ND		0.000500	mg/kg wet						
o-Xylene	ND		0.000500	mg/kg wet						
n-Propylbenzene	ND		0.000500	mg/kg wet						
n-Butylbenzene	ND		0.000500	mg/kg wet						
Naphthalene	ND		0.000500	mg/kg wet						
tert-Butylbenzene	ND		0.000500	mg/kg wet						
methyl-t-butyl ether (MTBE)	ND		0.000500	mg/kg wet						
Surrogate: 4-Bromofluorobenzene			*21.9*	*ug/L*	*25.0*		*87.8*	*70-130*		
Surrogate: Toluene-d8			*24.0*	*ug/L*	*25.0*		*95.8*	*70-130*		
Surrogate: 1,2-Dichlorobenzene-d4			*22.0*	*ug/L*	*19.0*		*116*	*70-130*		

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0844 - VOC (Continued)										
LCS (BAG0844-BS1)					Prepared & Analyzed: 7/27/2020					
Ethylbenzene	0.00967		0.000500	mg/kg wet	0.0100		96.7	80-120		
trans-1,3-Dichloropropene	0.0108		0.000500	mg/kg wet	0.0100		108	80-120		
Trichloroethene	0.00948		0.000500	mg/kg wet	0.0100		94.8	80-120		
Trichlorofluoromethane	0.00982		0.000500	mg/kg wet	0.0100		98.2	80-120		
Vinyl Chloride	0.00983		0.000500	mg/kg wet	0.0100		98.3	80-120		
1,1-dichloropropene	0.00997		0.000500	mg/kg wet	0.0100		99.7	80-120		
1,2,3-Trichlorobenzene	0.0113		0.000500	mg/kg wet	0.0100		113	80-120		
1,2,3-Trichloropropane	0.0110		0.000500	mg/kg wet	0.0100		110	80-120		
1,2,4-Trichlorobenzene	0.0105		0.000500	mg/kg wet	0.0100		105	80-120		
Dibromochloromethane	0.0105		0.000500	mg/kg wet	0.0100		105	80-120		
Hexachlorobutadiene	0.0106		0.000500	mg/kg wet	0.0100		106	80-120		
Dichlorodifluoromethane	0.00985		0.000500	mg/kg wet	0.0100		98.5	80-120		
trans-1,2-Dichloroethene	0.00894		0.000500	mg/kg wet	0.0100		89.4	80-120		
n-Butylbenzene	0.00971		0.000500	mg/kg wet	0.0100		97.1	80-120		
Isopropylbenzene	0.00982		0.000500	mg/kg wet	0.0100		98.2	80-120		
n-Propylbenzene	0.00976		0.000500	mg/kg wet	0.0100		97.6	80-120		
m+p-Xylene	0.0191		0.000500	mg/kg wet	0.0200		95.4	80-120		
1,1-Dichloroethene	0.00936		0.000500	mg/kg wet	0.0100		93.6	80-120		
Methyl ethyl ketone (MEK)	0.0122		0.00250	mg/kg wet	0.0100		122	80-120		
1,1-Dichloroethane	0.00884		0.000500	mg/kg wet	0.0100		88.4	80-120		
Methyl isobutyl ketone (MIBK)	0.0105		0.00250	mg/kg wet	0.0100		105	80-120		
methyl-t-butyl ether (MTBE)	0.00989		0.000500	mg/kg wet	0.0100		98.9	80-120		
o-Xylene	0.00962		0.000500	mg/kg wet	0.0100		96.2	80-120		
cis-1,3-Dichloropropene	0.0102		0.000500	mg/kg wet	0.0100		102	80-120		
p-isopropyltoluene	0.0101		0.000500	mg/kg wet	0.0100		101	80-120		
sec-Butylbenzene	0.0100		0.000500	mg/kg wet	0.0100		100	80-120		
Styrene	0.00941		0.000500	mg/kg wet	0.0100		94.1	80-120		
tert-Butylbenzene	0.0101		0.000500	mg/kg wet	0.0100		101	80-120		
Tetrachloroethene	0.00998		0.000500	mg/kg wet	0.0100		99.8	80-120		
Toluene	0.00939		0.000500	mg/kg wet	0.0100		93.9	80-120		
Naphthalene	0.0120		0.000500	mg/kg wet	0.0100		120	80-120		
Carbon disulfide	0.0109		0.000500	mg/kg wet	0.0100		109	80-120		
4-Chlorotoluene	0.0103		0.000500	mg/kg wet	0.0100		103	80-120		
Acrylonitrile	0.0100		0.000500	mg/kg wet	0.0100		100	80-120		
Benzene	0.00961		0.000500	mg/kg wet	0.0100		96.1	80-120		
Bromobenzene	0.00931		0.000500	mg/kg wet	0.0100		93.1	80-120		
Bromochloromethane	0.00937		0.000500	mg/kg wet	0.0100		93.7	80-120		
cis-1,2-dichloroethene	0.00900		0.000500	mg/kg wet	0.0100		90.0	80-120		
Bromoform	0.0102		0.000500	mg/kg wet	0.0100		102	80-120		
Dibromomethane	0.00898		0.000500	mg/kg wet	0.0100		89.8	80-120		
Chlorobenzene	0.00961		0.000500	mg/kg wet	0.0100		96.1	80-120		
1,1,2-Trichloroethane	0.0108		0.000500	mg/kg wet	0.0100		108	80-120		
1,1,2,2-Tetrachloroethane	0.0103		0.000500	mg/kg wet	0.0100		103	80-120		
1,1,1-Trichloroethane	0.00908		0.000500	mg/kg wet	0.0100		90.8	80-120		
1,1,1,2-Tetrachloroethane	0.00946		0.000500	mg/kg wet	0.0100		94.6	80-120		
Bromodichloromethane	0.00887		0.000500	mg/kg wet	0.0100		88.7	80-120		
1,2-Dichlorobenzene	0.00922		0.000500	mg/kg wet	0.0100		92.2	80-120		
Carbon Tetrachloride	0.00928		0.000500	mg/kg wet	0.0100		92.8	80-120		
2-hexanone	0.0112		0.00250	mg/kg wet	0.0100		112	80-120		
Chloroform	0.00854		0.000500	mg/kg wet	0.0100		85.4	80-120		
Chloroethane	0.00942		0.000500	mg/kg wet	0.0100		94.2	80-120		
1,2,4-Trimethylbenzene	0.00978		0.000500	mg/kg wet	0.0100		97.8	80-120		
1,2-Dibromoethane (EDB)	0.0111		0.000500	mg/kg wet	0.0100		111	70-130		

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0844 - VOC (Continued)										
LCS (BAG0844-BS1)					Prepared & Analyzed: 7/27/2020					
1,2-Dichloroethane	0.00911		0.000500	mg/kg wet	0.0100		91.1	80-120		
1,4-Dichlorobenzene	0.00964		0.000500	mg/kg wet	0.0100		96.4	80-120		
2-Chlorotoluene	0.0100		0.000500	mg/kg wet	0.0100		100	80-120		
1,2-Dibromo-3-chloropropane(DBCP)	0.0114		0.000500	mg/kg wet	0.0100		114	80-120		
2,2-Dichloropropane	0.00881		0.000500	mg/kg wet	0.0100		88.1	80-120		
1,2-Dichloropropane	0.00954		0.000500	mg/kg wet	0.0100		95.4	80-120		
1,3-Dichloropropane	0.0107		0.000500	mg/kg wet	0.0100		107	80-120		
1,3-Dichlorobenzene	0.00986		0.000500	mg/kg wet	0.0100		98.6	80-120		
1,3,5-Trimethylbenzene	0.00982		0.000500	mg/kg wet	0.0100		98.2	80-120		
Surrogate: Toluene-d8			*23.9*	*ug/L*	*25.0*		*95.5*	*70-130*		
Surrogate: 4-Bromofluorobenzene			*25.2*	*ug/L*	*25.0*		*101*	*70-130*		
Surrogate: 1,2-Dichlorobenzene-d4			*18.6*	*ug/L*	*19.0*		*98.0*	*70-130*		
Matrix Spike (BAG0844-MS1)		**Source: MAG0582-14**			Prepared & Analyzed: 7/27/2020					
1,2,4-Trimethylbenzene	0.476		0.0240	mg/kg dry	0.479	ND	99.3	70-130		
1,3-Dichlorobenzene	0.497		0.0240	mg/kg dry	0.479	ND	104	70-130		
1,1,1,2-Tetrachloroethane	0.454		0.0240	mg/kg dry	0.479	ND	94.7	70-130		
1,3,5-Trimethylbenzene	0.472		0.0240	mg/kg dry	0.479	ND	98.6	70-130		
1,2-Dichloroethane	0.431		0.0240	mg/kg dry	0.479	ND	89.9	70-130		
1,2-Dichlorobenzene	0.450		0.0240	mg/kg dry	0.479	ND	93.9	70-130		
1,2-Dibromoethane (EDB)	0.496		0.0240	mg/kg dry	0.479	ND	104	70-130		
1,2-Dibromo-3-chloropropane(DBCP)	0.471		0.0240	mg/kg dry	0.479	ND	98.4	70-130		
1,2-Dichloropropane	0.461		0.0240	mg/kg dry	0.479	ND	96.3	70-130		
1,2,4-Trichlorobenzene	0.529		0.0240	mg/kg dry	0.479	ND	110	70-130		
1,2,3-Trichloropropane	0.463		0.0240	mg/kg dry	0.479	ND	96.6	70-130		
1,2,3-Trichlorobenzene	0.539		0.0240	mg/kg dry	0.479	ND	113	70-130		
1,1-dichloropropene	0.487		0.0240	mg/kg dry	0.479	ND	102	70-130		
1,1-Dichloroethene	0.495		0.0240	mg/kg dry	0.479	ND	103	70-130		
1,1-Dichloroethane	0.460		0.0240	mg/kg dry	0.479	ND	96.0	70-130		
1,1,2-Trichloroethane	0.485		0.0240	mg/kg dry	0.479	ND	101	70-130		
1,1,1-Trichloroethane	0.458		0.0240	mg/kg dry	0.479	ND	95.5	70-130		
Isopropylbenzene	0.485		0.0240	mg/kg dry	0.479	ND	101	70-130		
1,3-Dichloropropane	0.490		0.0240	mg/kg dry	0.479	ND	102	70-130		
1,1,2,2-Tetrachloroethane	0.418		0.0240	mg/kg dry	0.479	ND	87.2	70-130		
Styrene	0.455		0.0240	mg/kg dry	0.479	ND	95.0	70-130		
m+p-Xylene	0.927		0.0240	mg/kg dry	0.958	ND	96.8	70-130		
Methyl ethyl ketone (MEK)	0.617		0.120	mg/kg dry	0.479	ND	129	70-130		
Methyl isobutyl ketone (MIBK)	0.419		0.120	mg/kg dry	0.479	ND	87.4	70-130		
methyl-t-butyl ether (MTBE)	0.439		0.0240	mg/kg dry	0.479	ND	91.7	70-130		
Naphthalene	0.536		0.0240	mg/kg dry	0.479	ND	112	70-130		
n-Butylbenzene	0.458		0.0240	mg/kg dry	0.479	ND	95.5	70-130		
n-Propylbenzene	0.473		0.0240	mg/kg dry	0.479	ND	98.8	70-130		
o-Xylene	0.467		0.0240	mg/kg dry	0.479	ND	97.4	70-130		
Hexachlorobutadiene	0.523		0.0240	mg/kg dry	0.479	ND	109	70-130		
sec-Butylbenzene	0.486		0.0240	mg/kg dry	0.479	ND	102	70-130		
tert-Butylbenzene	0.476		0.0240	mg/kg dry	0.479	ND	99.4	70-130		
Tetrachloroethene	0.494		0.0240	mg/kg dry	0.479	ND	103	70-130		
Toluene	0.462		0.0240	mg/kg dry	0.479	ND	96.5	70-130		
trans-1,2-Dichloroethene	0.440		0.0240	mg/kg dry	0.479	ND	91.8	70-130		
Trichloroethene	0.478		0.0240	mg/kg dry	0.479	ND	99.7	70-130		
Trichlorofluoromethane	0.435		0.0240	mg/kg dry	0.479	ND	90.7	70-130		
Vinyl Chloride	0.535		0.0240	mg/kg dry	0.479	ND	112	70-130		

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0844 - VOC (Continued)										
Matrix Spike (BAG0844-MS1)	**Source: MAG0582-14**				Prepared & Analyzed: 7/27/2020					
1,4-Dichlorobenzene	0.458		0.0240	mg/kg dry	0.479	ND	95.6	70-130		
Ethylbenzene	0.473		0.0240	mg/kg dry	0.479	ND	98.8	70-130		
p-isopropyltoluene	0.484		0.0240	mg/kg dry	0.479	ND	101	70-130		
4-Chlorotoluene	0.491		0.0240	mg/kg dry	0.479	ND	102	70-130		
2,2-Dichloropropane	0.448		0.0240	mg/kg dry	0.479	ND	93.6	70-130		
2-Chlorotoluene	0.489		0.0240	mg/kg dry	0.479	ND	102	70-130		
trans-1,3-Dichloropropene	0.558		0.0240	mg/kg dry	0.479	ND	116	70-130		
Dichlorodifluoromethane	0.480		0.0240	mg/kg dry	0.479	ND	100	70-130		
2-hexanone	0.476		0.120	mg/kg dry	0.479	ND	99.4	70-130		
Acrylonitrile	0.458		0.0240	mg/kg dry	0.479	ND	95.6	70-130		
Benzene	0.479		0.0240	mg/kg dry	0.479	ND	100	70-130		
Bromobenzene	0.480		0.0240	mg/kg dry	0.479	ND	100	70-130		
Bromochloromethane	0.485		0.0240	mg/kg dry	0.479	ND	101	70-130		
Chloroethane	0.394		0.0240	mg/kg dry	0.479	ND	82.2	70-130		
cis-1,2-dichloroethene	0.480		0.0240	mg/kg dry	0.479	ND	100	70-130		
Dibromochloromethane	0.492		0.0240	mg/kg dry	0.479	ND	103	70-130		
Bromodichloromethane	0.441		0.0240	mg/kg dry	0.479	ND	92.1	70-130		
cis-1,3-Dichloropropene	0.513		0.0240	mg/kg dry	0.479	ND	107	70-130		
Dibromomethane	0.479		0.0240	mg/kg dry	0.479	ND	99.9	70-130		
Chlorobenzene	0.465		0.0240	mg/kg dry	0.479	ND	97.1	70-130		
Carbon Tetrachloride	0.458		0.0240	mg/kg dry	0.479	ND	95.5	70-130		
Carbon disulfide	0.585		0.0240	mg/kg dry	0.479	ND	122	70-130		
Bromoform	0.440		0.0240	mg/kg dry	0.479	ND	91.8	70-130		
Chloroform	0.429		0.0240	mg/kg dry	0.479	ND	89.5	70-130		
Surrogate: Toluene-d8			*24.0*	*ug/L*	*25.0*		*95.8*	*70-130*		
Surrogate: 4-Bromofluorobenzene			*24.5*	*ug/L*	*25.0*		*98.1*	*70-130*		
Surrogate: 1,2-Dichlorobenzene-d4			*18.5*	*ug/L*	*19.0*		*97.5*	*70-130*		

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0844 - VOC (Continued)										
Matrix Spike Dup (BAG0844-MSD1)	**Source: MAG0582-14**				Prepared & Analyzed: 7/27/2020					
Methyl isobutyl ketone (MIBK)	0.502		0.120	mg/kg dry	0.479	ND	105	70-130	18.1	25
Methyl ethyl ketone (MEK)	0.715		0.120	mg/kg dry	0.479	ND	149	70-130	14.7	25
Dibromochloromethane	0.482		0.0240	mg/kg dry	0.479	ND	101	70-130	2.07	25
methyl-t-butyl ether (MTBE)	0.483		0.0240	mg/kg dry	0.479	ND	101	70-130	9.55	25
m+p-Xylene	0.900		0.0240	mg/kg dry	0.958	ND	94.0	70-130	2.94	25
Isopropylbenzene	0.478		0.0240	mg/kg dry	0.479	ND	99.7	70-130	1.49	25
Hexachlorobutadiene	0.559		0.0240	mg/kg dry	0.479	ND	117	70-130	6.64	25
Ethylbenzene	0.466		0.0240	mg/kg dry	0.479	ND	97.3	70-130	1.53	25
cis-1,2-dichloroethene	0.458		0.0240	mg/kg dry	0.479	ND	95.7	70-130	4.49	25
Dibromomethane	0.460		0.0240	mg/kg dry	0.479	ND	96.0	70-130	3.98	25
cis-1,3-Dichloropropene	0.530		0.0240	mg/kg dry	0.479	ND	111	70-130	3.22	25
Naphthalene	0.655		0.0240	mg/kg dry	0.479	ND	137	70-130	20.1	25
Chloroform	0.409		0.0240	mg/kg dry	0.479	ND	85.4	70-130	4.69	25
Chloroethane	0.412		0.0240	mg/kg dry	0.479	ND	85.9	70-130	4.40	25
Dichlorodifluoromethane	0.462		0.0240	mg/kg dry	0.479	ND	96.5	70-130	3.66	25
Toluene	0.447		0.0240	mg/kg dry	0.479	ND	93.3	70-130	3.37	25
1,2,4-Trimethylbenzene	0.467		0.0240	mg/kg dry	0.479	ND	97.5	70-130	1.83	25
Chlorobenzene	0.445		0.0240	mg/kg dry	0.479	ND	92.9	70-130	4.42	25
Vinyl Chloride	0.521		0.0240	mg/kg dry	0.479	ND	109	70-130	2.63	25
Trichlorofluoromethane	0.366		0.0240	mg/kg dry	0.479	ND	76.3	70-130	17.2	25
Trichloroethene	0.490		0.0240	mg/kg dry	0.479	ND	102	70-130	2.57	25
Tetrachloroethene	0.506		0.0240	mg/kg dry	0.479	ND	106	70-130	2.40	25
trans-1,2-Dichloroethene	0.437		0.0240	mg/kg dry	0.479	ND	91.3	70-130	0.546	25
n-Butylbenzene	0.462		0.0240	mg/kg dry	0.479	ND	96.4	70-130	0.938	25
tert-Butylbenzene	0.470		0.0240	mg/kg dry	0.479	ND	98.2	70-130	1.21	25
Styrene	0.454		0.0240	mg/kg dry	0.479	ND	94.7	70-130	0.316	25
sec-Butylbenzene	0.483		0.0240	mg/kg dry	0.479	ND	101	70-130	0.593	25
p-isopropyltoluene	0.483		0.0240	mg/kg dry	0.479	ND	101	70-130	0.198	25
o-Xylene	0.460		0.0240	mg/kg dry	0.479	ND	96.0	70-130	1.45	25
n-Propylbenzene	0.466		0.0240	mg/kg dry	0.479	ND	97.2	70-130	1.63	25
trans-1,3-Dichloropropene	0.583		0.0240	mg/kg dry	0.479	ND	122	70-130	4.53	25
1,1-dichloropropene	0.480		0.0240	mg/kg dry	0.479	ND	100	70-130	1.39	25
1,2-Dichloroethane	0.415		0.0240	mg/kg dry	0.479	ND	86.7	70-130	3.62	25
1,2-Dichlorobenzene	0.464		0.0240	mg/kg dry	0.479	ND	96.9	70-130	3.14	25
1,2-Dibromo-3-chloropropane(DBCP)	0.552		0.0240	mg/kg dry	0.479	ND	115	70-130	15.7	25
1,2,4-Trichlorobenzene	0.578		0.0240	mg/kg dry	0.479	ND	121	70-130	8.83	25
1,2-Dibromoethane (EDB)	0.506		0.0240	mg/kg dry	0.479	ND	106	70-130	2.10	25
1,2,3-Trichlorobenzene	0.620		0.0240	mg/kg dry	0.479	ND	129	70-130	13.9	25
1,3-Dichlorobenzene	0.501		0.0240	mg/kg dry	0.479	ND	105	70-130	0.864	25
1,1-Dichloroethene	0.485		0.0240	mg/kg dry	0.479	ND	101	70-130	2.05	25
1,1-Dichloroethane	0.442		0.0240	mg/kg dry	0.479	ND	92.2	70-130	4.04	25
1,1,2-Trichloroethane	0.506		0.0240	mg/kg dry	0.479	ND	106	70-130	4.16	25
1,1,2,2-Tetrachloroethane	0.456		0.0240	mg/kg dry	0.479	ND	95.1	70-130	8.67	25
1,1,1-Trichloroethane	0.440		0.0240	mg/kg dry	0.479	ND	91.9	70-130	3.84	25
1,1,1,2-Tetrachloroethane	0.454		0.0240	mg/kg dry	0.479	ND	94.8	70-130	0.106	25
1,2,3-Trichloropropane	0.497		0.0240	mg/kg dry	0.479	ND	104	70-130	7.09	25
Carbon disulfide	0.572		0.0240	mg/kg dry	0.479	ND	119	70-130	2.32	25
Bromoform	0.457		0.0240	mg/kg dry	0.479	ND	95.4	70-130	3.85	25
Bromodichloromethane	0.427		0.0240	mg/kg dry	0.479	ND	89.1	70-130	3.31	25
Bromochloromethane	0.460		0.0240	mg/kg dry	0.479	ND	96.0	70-130	5.37	25
Bromobenzene	0.476		0.0240	mg/kg dry	0.479	ND	99.4	70-130	0.901	25
Benzene	0.478		0.0240	mg/kg dry	0.479	ND	99.8	70-130	0.200	25
1,2-Dichloropropane	0.468		0.0240	mg/kg dry	0.479	ND	97.6	70-130	1.34	25

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0844 - VOC (Continued)										
Matrix Spike Dup (BAG0844-MSD1)	**Source: MAG0582-14**				Prepared & Analyzed: 7/27/2020					
4-Chlorotoluene	0.487		0.0240	mg/kg dry	0.479	ND	102	70-130	0.784	25
1,3,5-Trimethylbenzene	0.469		0.0240	mg/kg dry	0.479	ND	97.9	70-130	0.712	25
2-hexanone	0.567		0.120	mg/kg dry	0.479	ND	118	70-130	17.4	25
2-Chlorotoluene	0.473		0.0240	mg/kg dry	0.479	ND	98.7	70-130	3.39	25
2,2-Dichloropropane	0.439		0.0240	mg/kg dry	0.479	ND	91.7	70-130	2.05	25
1,4-Dichlorobenzene	0.468		0.0240	mg/kg dry	0.479	ND	97.7	70-130	2.17	25
1,3-Dichloropropane	0.496		0.0240	mg/kg dry	0.479	ND	104	70-130	1.36	25
Carbon Tetrachloride	0.450		0.0240	mg/kg dry	0.479	ND	93.9	70-130	1.69	25
Acrylonitrile	0.503		0.0240	mg/kg dry	0.479	ND	105	70-130	9.47	25
Surrogate: Toluene-d8			*24.0*	*ug/L*	*25.0*		*95.9*	*70-130*		
Surrogate: 4-Bromofluorobenzene			*24.6*	*ug/L*	*25.0*		*98.4*	*70-130*		
Surrogate: 1,2-Dichlorobenzene-d4			*19.0*	*ug/L*	*19.0*		*100*	*70-130*		

MAG0582

Due: 07/31/20

Anatek Labs, Inc.

Chain of Custody Record

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Anatek Log-In #

Company Name: Pioneer Technologies (PTC)
Address: 5205 Corporate Center Ct. SE
City: Lacey State: WA Zip: 98503
Phone: 360-570-1700
Fax:

Project Manager: Joel Heck
Project Name & #: Sunset Auto
Email Address: Heckerj@pioneer.com
Purchase Order #:
Sampler Name & phone: Joel Heck 360-828-3739

Turn Arou

Please refer to our normal turn around times at:
http://www.anateklabs.com/services/guidelines/reporting.asp

X Normal
__Next Day*
__2nd Day*
__Other*_____

*All rush order requests must be prior approved.

__Phone
__Mail
__Fax
__Email

Provide Sample Description

List Analyses Requested

Note Special Instructions/Comments

* Hold all EPH/VPH, TOC, and Cr+6

- use times and sample names as shown on chain of custody if there is a discrepancy

Lab ID	Sample Identification	Sampling Date/Time	Matrix	# of Containers	Sample Volume	Preservative	TPH-Dx	TPH-Gx	VOCs	Pb/As	PAHs	RCRA 8 Metals	TOC	Cr+6	VPH	EPH
-01	S-MW-8-6-8-071420	7/14/20	845 S	2				X	X	X						
-02	S-MW-9-11-13-071420	7/14/20	1000 S					X	X	X						
-03	S-MW-9-11-13-071420-01	7/14	1000 S					X	X	X						
-04	S-MW-10-6-8-071420	7/14/20	1100 S					X	X	X						
-05	S-MW-11-3-5-071420		1200 S					X	X	X						
-06	S-MW-11-9-11-071420		1205 S					X	X	X						
-07	S-MW-12-18-20-071420		1330 S					X	X	X						
-08	S-B30-2-4-071420		1510 S				X	X	X		X	X				
-09	S-B31-3-5-071420		1201 S													
-10	S-B32-3-5-071420		1400 S													
-11	S-B33-2-4-071420		1240 S									X				
-12	S-B34-2-4-071420		845 S									[redacted]	No material			7/14/20
-13	S-B35-2-4-071420		0910 S									X				

	Printed Name	Signature	Company	Date	Time
Relinquished by	Joel Heck		PTC	7/15	1000
Received by	Alex Bronson		Anatek	7-20-20	12:34
Relinquished by					
Received by					
Relinquished by					
Received by					

Inspection Checklist

Received Intact?	Y	N
Labels & Chains Agree?	Y	N
Containers Sealed?	Y	N
VOC Head Space?	Y	N

Temperature (°C): 20.8
Preservative:
Date & Time:
Inspected By:

Form COC01.00 - Eff 1 Mar 2015

Samples submitted to Anatek Labs may be subcontracted to other accredited labs if necessary. This message serves as notice of this possibility. Sub-contracted analyses will be clearly noted on the analytical report.

MAG0582

Due: 07/31/20

Anatek Labs, Inc.

Chain of Custody Record

1282 Alturas Drive, Moscow ID 83843 (208) 883-2839 FAX 882-9246
504 E Sprague Ste D, Spokane WA 99202 (509) 838-3999 FAX 838-4433

Anatek Log-In #

Company Name: Pioneer Technologies (PTC)	Project Manager: Joel Hecker
Address: 5205 Corporate Center Ct. SE	Project Name & #: Sunset Auburn
City: Lacey State: WA Zip: 98503	Email Address: Heckerj@uspioneer.com
Phone: 360-570-1700	Purchase Order #:
Fax:	Sampler Name & phone: JH 360-828-3739

Turn Ar

Please refer to our normal turn around times at:
http://www.anateklabs.com/services/guidelines/reporting.asp

X Normal
__Next Day*
__2nd Day*
__Other*_____

*All rush order requests must be prior approved.

__Phone
__Mail
__Fax
__Email

Provide Sample Description / List Analyses Requested

Lab ID	Sample Identification	Sampling Date/Time	Matrix	# of Containers	Sample Volume	TPH-Gx x2	VOCs x3	TPH-Dx	PAHs	RCRA 8 Metals	EPH	TOC	Cr6		
Preservative:															
-14	S-B36-5-7-071520	7/15/20	1130 S	2		X	X	X	X	X					
-15	S-B37-5-7-071520		1100 S	2											
-16	S-B38-4-6-071520		0920 S	2											
-17	S-B39-5-7-071520		0945 S	2											
-18	S-B40-5-7-071520		1015 S	2											
-19	S-B41-[redacted]3-5-071520		1215 S	2											
-20	S-B43-2-4-071520		0830 S	2											
-21	SD-01-0-0.5-071520		1300 Sed	2											
-22	GW-B30-071520		0800 GW	11											
-23	GW-B37-071520		1215 GW	11											
-24	GW-B39-071520		1150 GW	11											
-25	GW-B41-071520		1330 GW	11											
-26	GW-B43-071520		1030 GW	11											

Note Special Instructions/Comments

* Hold all VPH/EPH, TOC + Cr6 Analysis

* If discrepancy, use Sample ID shown on this chain of Custody. Bottles may be slightly different.

*all metals are dissolved (field filtered)

	Printed Name	Signature	Company	Date	Time
Relinquished by	Joel Hecker		PTC	7/15	1500
Received by	Alex Bronson		Anatek	7-16-20	14:04
Relinquished by					
Received by					
Relinquished by					
Received by					

Inspection Checklist

Received Intact?	Y	N
Labels & Chains Agree?	Y	N
Containers Sealed?	Y	N
VOC Head Space?	Y	N

Temperature (°C):_____
Preservative:_____
Date & Time:_____
Inspected By:_____

Form COC01.00 - Eff 1 Mar 2015

Page 1 of 1

Samples submitted to Anatek Labs may be subcontracted to other accredited labs if necessary. This message serves as notice of this possibility. Sub-contracted analyses will be clearly noted on the analytical report.

MAG0582

Due: 07/31/20

Anatek Labs, Inc.

Chain of Custody Record

1282 Alturas Drive, Moscow ID 83843 (208) 883-2839 FAX 882-9246
504 E Sprague Ste D, Spokane WA 99202 (509) 838-3999 FAX 838-4433

Anatek Log-In #

Company Name: Pioneer Technologies (PTC)	Project Manager: Joel Hecker
Address:	Project Name & # : Sunset Auto
City: State: Zip:	Email Address : Heckerj@ussioneer.com
Phone: 360. 570-1700	Purchase Order #:
Fax:	Sampler Name & phone: Joel Hecker / 360-828-7739

Turn Arou

Please refer to our normal turn around times at:
http://www.anateklabs.com/services/guidelines/reporting.asp

X Normal
__Next Day*
__2nd Day*
__Other*_____

*All rush order requests must be prior approved.

__Phone
__Mail
__Fax
__Email

Provide Sample Description

List Analyses Requested

Note Special Instructions/Comments

* Hold all EPH/VPH, TOL, and Cr6+

Lab ID	Sample Identification	Sampling Date/Time	Matrix	# of Containers	Sample Volume	Preservative:	TPH-DX	TPH-GX	VOCs	PB/AS	RCRA8	TOL	Cr6+	VPH	PAHs	EPA
-27	S-B42-4-6-071420	7/14/20 1115	S	2			X	X	X		X				X	
-28	S-B44-6-11-071420	1400	S	2												
-29	S-B45-8-10-071420	1500	S	2												
-30	GW-B32-071420	1430	GW	11												
-31	GW-B32-071420-01	1430	GW													
-32	GW-B33-071420	1700	GW													
-33	GW-B34-071420	0930	GW													
-34	GW-B35-071420	1030	GW													
-35	GW-B42-071420	1145	GW													
-36	GW-B44-071420	1400	GW													
-37	GW-B45-071420	1500	GW	↓			X	X	X		X				X	
-38	TB-071420	—	GW	2					X							

Inspection Checklist

Received Intact?	Y	N
Labels & Chains Agree?	Y	N
Containers Sealed?	Y	N
VOC Head Space?	Y	N

Temperature (°C):_____
Preservative:_____
Date & Time:_____
Inspected By:_____

	Printed Name	Signature	Company	Date	Time
Relinquished by	Joel Hecker		PTC	7/15	1000
Received by	Alex Bronson		Anatek	7-20-20	12:34
Relinquished by					
Received by					
Relinquished by					
Received by					

Samples submitted to Anatek Labs may be subcontracted to other accredited labs if necessary. This message serves as notice of this possibility. Sub-contracted analyses will be clearly noted on the analytical report.

MAG0582

Due: 07/31/20

Anatek Labs, Inc.

Chain of Custody Record

1282 Alturas Drive, Moscow ID 83843 (208) 883-2839 FAX 882-9246
504 E Sprague Ste D, Spokane WA 99202 (509) 838-3999 FAX 838-4433

Anatek Log-In #

Company Name: Pioneer Technologies (PTC)	Project Manager: Joel Hecker
Address:	Project Name & # : Sunset Auburn
City: State: Zip:	Email Address :
Phone:	Purchase Order #:
Fax:	Sampler Name & phone:

Turn A

Please refer to our normal turn around times at:
http://www.anateklabs.com/services/guidelines/reporting.asp

X Normal
__Next Day*
__2nd Day*
__Other*_____

*All rush order requests must be prior approved.

__Phone
__Mail
__Fax
__Email

Provide Sample Description / List Analyses Requested

Lab ID	Sample Identification	Sampling Date/Time	Matrix	# of Containers	Sample Volume	Preservative: VOCs
39	TB-071520	7/15/20	Water	1		X

Note Special Instructions/Comments

Inspection Checklist

Received Intact?	Y	N
Labels & Chains Agree?	Y	N
Containers Sealed?	Y	N
VOC Head Space?	Y	N

Temperature (°C):_____
Preservative:_____
Date & Time:_____
Inspected By:_____

	Printed Name	Signature	Company	Date	Time
Relinquished by	Joel Heck		PTC	7/15	1500
Received by	Alex Branson		Anatek	7-16-20	14:04
Relinquished by					
Received by					
Relinquished by					
Received by					

Form COC01.00 - Eff 1 Mar 2015

Samples submitted to Anatek Labs may be subcontracted to other accredited labs if necessary. This message serves as notice of this possibility. Sub-contracted analyses will be clearly noted on the analytical report.

MAG0582

Due: 07/31/20

Anatek Labs, Inc.

Sample Receipt and Preservation Form

Client Name: Pioneer Project: *(apply Anatek sample label here)*

TAT: Normal RUSH: _____ days

Samples Received From: (FedEx) UPS USPS Client Courier Other: _____

Custody Seal on Cooler/Box: Yes (No) Custody Seals Intact: Yes No (N/A)

Number of Coolers/Boxes: ~~1~~ 8 Type of Ice: (Ice/Ice Packs) Blue Ice Dry Ice None

Packing Material: (Bubble Wrap) Bags Foam/Peanuts None Other: _____

Cooler Temp As Read (°C): ~~2.7~~ 20.8 Cooler Temp Corrected (°C): ~~2.7~~ 20.8 Thermometer Used: IR-3

				Comments:
Samples Received Intact?	(Yes)	No	N/A	See attached
Chain of Custody Present?	(Yes)	No	N/A	
Samples Received Within Hold Time?	(Yes)	No	N/A	
Samples Properly Preserved?	(Yes)	No	N/A	
VOC Vials Free of Headspace (<6mm)?	(Yes)	No	N/A	
VOC Trip Blanks Present?	(Yes)	No	N/A	
Labels and Chains Agree?	Yes	(No)	N/A	more bottles sent
Total Number of Sample Bottles Received: ~~164~~ 195				

Chain of Custody Fully Completed?	Yes	(No)	N/A	
Correct Containers Received?	(Yes)	No	N/A	
Anatek Bottles Used?	(Yes)	No	Unknown	

Record preservatives (and lot numbers, if known) for containers below:

HCl (1919) → TPH-G & Mercury & VOC
P250 → Metals
HCl (1925) → FOG

Notes, comments, etc. (also use this space if contacting the client - record names and date/time)

See attached for bottles
Hex chrom unfiltered in 125 → P 125 for sample

Received/Inspected By: _____ Date/Time: 7-16-20 14:04

Form F18.00 - Eff 8 Feb 2019

~~B36-5-7-0~~ SOILS

MAG0582

Due: 07/31/20

- SD-01-0-0-5-071820 ~~xx~~ 4 oz EPH 8 oz
- S-MW-8-6-9-0714 4 oz VPH 8 oz
- S-MW-9-11-13-0714 4oz VPH 8 oz
- S-MW-9-11-13-0714-1 4oz VPH 8 oz
- S-MW-10-6-9-0714 8 oz
- S-MW-11-9-11-0714 4 oz VPH 8 oz
- S-MW-11-3-5-0714 4oz VPH 8 oz
- S-MW-12(5)-20-0714 4oz VPH 8 oz

- S-B30-2-4-071420 4oz EPH 8 oz
- S-B33-2-4-071420 8 oz
- S-B34-2-4-071420 4oz EPH 8 oz
- S-B35-2-4-071420 4oz EPH 8 oz
- S-B36-5-7-071520 8 oz
- S-B37-5-7-071520 2(4oz EPH) 8 oz
- S-B38-4-6-071520 4oz EPH 8oz
- S-B39-5-7-071520 4oz EPH 8 oz
- S-B40-5-7-071520 4oz EPH 8 oz
- S-B41-3-5-071520 4oz EPH 8 oz
- S-B42-4-6-071420 4oz EPH
- S-B43-2-4-071520 4oz EPH 8 oz
- S-B44-6-11-0714 4oz EPH 8 oz

+ 1 Trip Blank

GW-B32-071420 1(mercury) 1(metals) 1(Hexchrom filtered) 1(Hexchrom unfiltered)

- GW-B30-071520 2(TPH) 1(meta) 1(TPH)
  missing: Hexchrom unfiltered
- GW-B32-071420-01 2(TPH-G) 1(mercury) 3(VOC) 1(metals) 1(TPH-DX) 1(Hexchrom ~~filtered~~ filtered) 1(Hexchrom unfiltered p 250)
  ~~missing PAH & EPH~~
- GW-B33-071420 1(TPHG) 1(VOC) 1(mercury) 1(PAH) 1(EPH)
  ~~missing: TPH-DX~~ ~~Hexchrom filtered~~ Hexchrom Unfiltered ~~3 metals~~
- GW-B34-071420 2(TPHG) 3(VOC) 1(TPH-DX) 1(PAH)
  missing: metals EPH mercury Hexachrom filtered Hexchrom Unfiltered
- GW-B35-071420 2(TPHG) 1(mercury) 3(VOC) 1(EPH) 1(PAH) 1(~~EPH~~ TPH-DX)
  ~~missing: Hexchrom filtered & Unfiltered & metals~~
- GW-B37-071520 2(TPHG) 1(mercury) 3(VOC) 1(metals) 1(Hexchrom filtered) 1(EPH) 1(PAH) 1(TPH-DX)
  missing: Hexchrom Unfiltered
- GW-B39-071520 2(TPH-G) 1(mercury) 3(VOC) 1(metals) 1(Hexchrom filtered) 1(TPH-DX) 1(PAH) 1(EPH)
  missing Hexchrom Unfiltered
- GW-B41-071420 2(TPH-G) 1(Mercury) 3(VOC) 1(metals) 1(Hexchrom filtered) 1(EPH) 1(PAH) 1(TPH-DX)
  missing: Hexchrom Unfiltered
- GW-B42-071420 2(TPH-G) 1(mercury) 3(VOC) 1(metals) 1(Hexchrom filtered) 1(Hexchrom unfiltered) 1(PAH) 1(EPH)
  ~~missing TPH-DX~~
- GW-B43-071520 2(TPH-G) 1(mercury) 3(VOC) 1(metals) 1(Hexchrom filtered) 1(TPH-DX) 1(EPH) 1(PAH)
  missing: Hexchrom Unfiltered
- GW-B44-071420 2(TPH-G) 1(mercury) 3(VOC) 1(metals) 1(Hexachrom unfiltered) 1(Hexachrom filtered) 1(PAH) 1(EPH) 1(TPH-DX)
  ~~missing: none~~
- GW-B45-071420 2(TPH-G) 1(mercury) 3(VOC) 1(metals) 1(TPH-DX) 1(PAH) 1(EPH)
  missing: Hexachrom ~~filtered~~ unfiltered
- ~~Missing GW-B44~~

Warm cooler

Broken:

GW-B33-071420 TPH-Dx

MAG0582

Due: 07/31/20

S-B31-3-5-071420 8oz & 4oz jar

S-B32-3-5-071420 8oz & 4oz

S-B33-2-4-071420 4oz

S-B42-4-6-071420 8oz

S-B-45-8-10-0714 8oz & 4oz

S-MW-10-68-0714 4oz

GW-B32-071420-01 1(EPH) 1(PAH)

GW-B32-071420 2(TPH-G) 3(VOC) 1(EPH) ~~Hextchrom~~
1(PAH) 1(TPH-Dx)

GW-B33-071420 (see broken above) 2(VOC) 1(TPH-G) 1(Hexchrom filtered)
1(Hexchrom unfiltered) 1(metals)

GW-B35-071420 1(Hexchrom filtered)
1(Hexchrom unfiltered) 1(metals)

GW-B42-071420 1(TPH-Dx)

GW-B45-071420 1(Hexchrom filtered)

TB-071420

MAG0582

Due: 07/31/20

Todd Taruscio

To: Joel Hecker
Subject: RE: Sunset Auburn Project

Joel

Below is a list of samples contained in the cooler received today

S-B31-3-5-071420 (8 oz and 4 oz)
S-B32-3-5-071420 (8 oz and 4 oz)
S-B33-2-4-071420 (4 oz)
S-B42-4-6-071420 (8 oz)
S-B45-8-10-071420 (8 oz and 4 oz)
~~S-MW-B32-071420-01~~ (4 oz)
S-MW-10-6-8-0714

GW-B32-071420 (2 EPH, 2 PAH, 3 VOC, 2 TPHG, 1 TPHDX) → GW-B32-071420-01 1 EPH, 1 PAH; GW-B32-071420 2 TPH-G, 3 VOC, 1 EPH, 1 PAH, 1 TPH-DX
GW-B33-071420 (2 VOC, 1 TPHG, 1 HexCr filtered, 1 HexCr unfiltered, 1 Metals)- **1 broken TPHDx**
GW-B35-071420 (1 HexCr filtered, 1 HexCr unfiltered, 1 Metals)
GW-B42-071420 (1 TPHDx)
GW-B45-071420 (1 HexCr filtered)

Here are the things we are still missing...
GW-B30-071520 (1 HexCr unfiltered)
GW-B34-071420 (EPH, metals, and both hexachromes)~~+~~ Mercury
GW-B37-071520 (hexachrome unfiltered)
GW-B39-071420 (hexachrome unfiltered)
GW-B41-071420 (hexachrome unfiltered)
GW-B43-071520 (hexachrome unfiltered)
GW-B45-071420 (hexachrome unfiltered)

Todd Taruscio PhD
Laboratory Manager
Work 208-883-2839
Cell 208-882-4674

ANATEK LABS

MAG0582
Due: 07/31/20

Alex Bronson

From: Todd Taruscio
Sent: Monday, July 20, 2020 3:37 PM
To: Justin Doty
Cc: Alex Bronson
Subject: FW: Sunset Auburn Project

From: Joel Hecker <HeckerJ@uspioneer.com>
Sent: Monday, July 20, 2020 3:34 PM
To: Todd Taruscio <toddt@anateklabs.com>
Cc: Troy Bussey <BusseyT@uspioneer.com>
Subject: RE: Sunset Auburn Project

Okay. That sounds good. Let's go for it.

Thanks,
Joel

Joel Hecker, LG, PG
Senior Scientist/Geologist

PIONEER Technologies Corporation
5205 Corporate Ctr. Ct. SE, Ste. A
Olympia, WA 98503-5901
Phone: 360.570.1700 Ext: 109
https://uspioneer.com/

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From: Todd Taruscio [mailto:toddt@anateklabs.com]
Sent: Monday, July 20, 2020 3:32 PM
To: Joel Hecker <HeckerJ@uspioneer.com>
Subject: RE: Sunset Auburn Project

Joel

We will have to add the qualifier "Sample was received above method-specified temperature" for all of those received today. Thus it will be up to your regulator as to will they accept the data.

Regards
Todd

MAG0582

Due: 07/31/20

Todd Taruscio PhD
Laboratory Manager
Work 208-883-2839
Cell 208-882-4674

ANATEK LABS

Analytical Resources, Incorporated
Analytical Chemists and Consultants

26 August 2020

Todd Taruscio
Anatek Labs, Inc.
1282 Alturas Drive
Moscow, ID 83843

RE: MAG0582

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
20H0173	N/A

Shelly Fishel

Digitally signed by Shelly Fishel
Date: 2020.08.26 16:05:24 -07'00'

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

20H0173

Anatek Labs, Inc.

SUBCONTRACT ORDER

1282 Alturas Drive - Moscow, ID 83843 - (208) 8832839 - Fax (208) 8829246 - email moscow@anateklabs.com
504 E Sprague Ste. D - Spokane, WA 99202 - (509) 838-3999 - fax (509) 838-4433 - email spokane@anateklabs.com

Sending Laboratory:

Anatek Labs Inc, Moscow ID
1282 Alturas Drive
Moscow, ID 83843
Phone: 208-883-2839
Fax: 208-882-9246

Project Manager: Todd Taruscio
toddt@anateklabs.com

Subcontracted Laboratory:

Analytical Resources
4611 S. 134th Pl. #100
Tukwila, WA 98168
Phone: (206) 695-6200
Fax:

Work Order: MAG0582

Analysis	Due	Expires	Comments
Lab Sample ID: MAG0582-01 ***Sampled: 07/14/2020 08:45***			
Client Sample Name: S-MW-8-6-8-071420			
TOC	07/29/2020	08/11/2020 08:45	
Containers Supplied:			
Lab Sample ID: MAG0582-11 ***Solid Sampled: 07/14/2020 12:40***			
Client Sample Name: S-B33-2-4-071420			
TOC	07/29/2020	08/11/2020 12:40	
Containers Supplied:			

Chris Sandison — Released By — 08/13/2020 — Date

Jacob Walter — Received By — 08/14/2020 — Date

Anatek Labs, Inc.	Project: MAG0582	
1282 Alturas Drive	Project Number: [none]	**Reported:**
Moscow ID, 83843	Project Manager: Todd Taruscio	26-Aug-2020 15:53

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MAG0582-01	20H0173-01	Solid	14-Jul-2020 08:45	14-Aug-2020 10:12
MAG0582-11	20H0173-02	Solid	14-Jul-2020 12:40	14-Aug-2020 10:12

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Anatek Labs, Inc.	Project: MAG0582	
1282 Alturas Drive	Project Number: [none]	**Reported:**
Moscow ID, 83843	Project Manager: Todd Taruscio	26-Aug-2020 15:53

Work Order Case Narrative

Client: Anatek Labs, Inc.
Project: MAG0582
Work Order: 20H0173

Sample receipt

Samples as listed on the preceding page were received 14-Aug-2020 10:12 and 19-Aug-2020 09:37 under ARI work order 20H0173. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Wet Chemistry

The sample(s) were prepared and analyzed outside the recommended holding times. The holding time was exceeded upon sample receipt.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Anatek Labs
Project Name: MAG0582

COC No(s): _____ (NA)
Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 20H0173
Tracking No: 1298 1762 4111 4286 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	(YES)	NO
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1012 3.9

If cooler temperature is out of compliance fill out form 00070F
Temp Gun ID#: D00 (5006)

Cooler Accepted by: JSm Date: 08/14/2020 Time: 1012

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used?	(Bubble Wrap) Wet Ice (Gel Packs) Baggies Foam Block Paper Other:		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
How were bottles sealed in plastic bags?	Individually	Grouped	(Not)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		YES	(NO)
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		

Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: JSm Date: 08/18/2020 Time: 0921 Labels checked by: JSm

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

Sample MAG0582-11 was not received originally, Sample MAG0582-04 was received instead. Sample -11 will be sent today and we are returning sample -04 today as well.

By: JSm Date: 08/18/2020

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Anatek
Project Name: MAG0582
COC No(s): NA
Delivered by: Fed-Ex UPS Courier Hand Delivered Other:
Assigned ARI Job No: 20H0173
Tracking No: 1Z9811760140440295 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 0935 22.1

If cooler temperature is out of compliance fill out form 00070F
Temp Gun ID#: DOO 5296

Cooler Accepted by: JJ Date: 08/19/2020 Time: 0935

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used?	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:		
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA		

Were the sample(s) split by ARI? NA YES Date/Time: Equipment: Split by:

Samples Logged by: JJ Date: 08/19/2020 Time: 0937 Labels checked by: JJ

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Temperature Compliance Form

ARI Work Order: 20H0173

Cooler#: _____ Temperature(°C): 22.1

Sample ID	Bottle Count	Bottle Type
Samples received above 6°C		

Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type

Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type

Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type

Completed by: _____ Date: 8/19/2020 Time: 0935

Anatek Labs, Inc.	Project: MAG0582	
1282 Alturas Drive	Project Number: [none]	**Reported:**
Moscow ID, 83843	Project Manager: Todd Taruscio	26-Aug-2020 15:53

MAG0582-01

20H0173-01 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 07/14/2020 08:45
Instrument: TOC Cube Analyst: BF — Analyzed: 08/21/2020 00:00

Sample Preparation: Preparation Method: PSEP 1986 (modified) — Extract ID: 20H0173-01 A
Preparation Batch: BIH0390 — Sample Size: 0.5033 g (wet) — Dry Weight:0.38 g
Prepared: 08/20/2020 — Final Volume: 0.5033 mL — % Solids: 75.06

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	0.18	%	H

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Anatek Labs, Inc.	Project: MAG0582	
1282 Alturas Drive	Project Number: [none]	**Reported:**
Moscow ID, 83843	Project Manager: Todd Taruscio	26-Aug-2020 15:53

MAG0582-01

20H0173-01 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 07/14/2020 08:45
Instrument: BAL2 Analyst: uw — Analyzed: 08/20/2020 14:37

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20H0173-01
Preparation Batch: BIH0392 — Sample Size: 10 g (wet) — Dry Weight:7.51 g
Prepared: 08/20/2020 — Final Volume: 10 g — % Solids: 75.06

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	75.06	%	H

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Anatek Labs, Inc.	Project: MAG0582	
1282 Alturas Drive	Project Number: [none]	**Reported:**
Moscow ID, 83843	Project Manager: Todd Taruscio	26-Aug-2020 15:53

MAG0582-11

20H0173-02 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 07/14/2020 12:40
Instrument: TOC Cube Analyst: BF — Analyzed: 08/21/2020 00:30

Sample Preparation: Preparation Method: PSEP 1986 (modified) — Extract ID: 20H0173-02 A
Preparation Batch: BIH0390 — Sample Size: 0.6462 g (wet) — Dry Weight:0.52 g
Prepared: 08/20/2020 — Final Volume: 0.6462 mL — % Solids: 80.68

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	0.66	%	H

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Anatek Labs, Inc.	Project: MAG0582	
1282 Alturas Drive	Project Number: [none]	**Reported:**
Moscow ID, 83843	Project Manager: Todd Taruscio	26-Aug-2020 15:53

MAG0582-11

20H0173-02 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 07/14/2020 12:40
Instrument: BAL2 Analyst: uw — Analyzed: 08/20/2020 14:37

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20H0173-02
Preparation Batch: BIH0392 — Sample Size: 10 g (wet) — Dry Weight:8.07 g
Prepared: 08/20/2020 — Final Volume: 10 g — % Solids: 80.68

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	80.68	%	H

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Anatek Labs, Inc.	Project: MAG0582	
1282 Alturas Drive	Project Number: [none]	**Reported:**
Moscow ID, 83843	Project Manager: Todd Taruscio	26-Aug-2020 15:53

Wet Chemistry - Quality Control

Batch BIH0390 - PSEP 1986 (modified)

Instrument: TOC Cube Analyst: BF

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIH0390-BLK1)				Prepared: 20-Aug-2020 Analyzed: 20-Aug-2020 22:58							
Total Organic Carbon	ND	0.02	0.02	%							U
LCS (BIH0390-BS1)				Prepared: 20-Aug-2020 Analyzed: 20-Aug-2020 23:29							
Total Organic Carbon	45.2	0.02	0.02	%	44.4		102	80-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Anatek Labs, Inc.	Project: MAG0582	
1282 Alturas Drive	Project Number: [none]	**Reported:**
Moscow ID, 83843	Project Manager: Todd Taruscio	26-Aug-2020 15:53

Wet Chemistry - Quality Control

Batch BIH0392 - No Prep Wet Chem

Instrument: BAL2 Analyst: uw

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIH0392-BLK1)				Prepared: 20-Aug-2020 Analyzed: 20-Aug-2020 14:37							
Total Solids	ND	0.04	0.04	%							U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Anatek Labs, Inc.	Project: MAG0582	
1282 Alturas Drive	Project Number: [none]	**Reported:**
Moscow ID, 83843	Project Manager: Todd Taruscio	26-Aug-2020 15:53

Certified Analyses included in this Report

Analyte	Certifications
EPA 9060A m in Solid	
Total Organic Carbon	WADOE
Total Organic Carbon	
Total Organic Carbon	WADOE
Total Organic Carbon	WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Anatek Labs, Inc.	Project: MAG0582	
1282 Alturas Drive	Project Number: [none]	**Reported:**
Moscow ID, 83843	Project Manager: Todd Taruscio	26-Aug-2020 15:53

Notes and Definitions

H	Hold time violation - Hold time was exceeded.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

August 28, 2020

Mr. Todd Taruscio
Anatek Labs
1282 Alturas Dr.
Moscow, ID 83843

Dear Mr. Taruscio,

On August 14th, 2 samples were received by our laboratory and assigned our laboratory project number EV20080079. The project was identified as your MAG0582. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

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CERTIFICATE OF ANALYSIS

CLIENT:	Anatek Labs 1282 Alturas Dr. Moscow, ID 83843	DATE:	8/28/2020
		ALS JOB#:	EV20080079
		ALS SAMPLE#:	EV20080079-01
CLIENT CONTACT:	Todd Taruscio	DATE RECEIVED:	08/14/2020
CLIENT PROJECT:	MAG0582	COLLECTION DATE:	7/14/2020 2:00:00 PM
CLIENT SAMPLE ID	MAG0582-10 / S-B32-3-5-071420	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
>C8-C10 Aliphatics	NWEPH	U, HT07	10	2	MG/KG	08/26/2020	EBS
>C10-C12 Aliphatics	NWEPH	U, HT07	10	2	MG/KG	08/26/2020	EBS
>C12-C16 Aliphatics	NWEPH	**390 HT07**	10	2	MG/KG	08/26/2020	EBS
>C16-C21 Aliphatics	NWEPH	**3200 HT07**	10	2	MG/KG	08/26/2020	EBS
>C21-C34 Aliphatics	NWEPH	**5000 HT07**	10	2	MG/KG	08/26/2020	EBS
>C8-C10 Aromatics	NWEPH	U, HT07	10	2	MG/KG	08/26/2020	EBS
>C10-C12 Aromatics	NWEPH	U, HT07	10	2	MG/KG	08/26/2020	EBS
>C12-C16 Aromatics	NWEPH	**16 HT07**	10	2	MG/KG	08/26/2020	EBS
>C16-C21 Aromatics	NWEPH	**1200 HT07**	10	2	MG/KG	08/26/2020	EBS
>C21-C34 Aromatics	NWEPH	**1700 HT07**	10	2	MG/KG	08/26/2020	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 2X Dilution	NWEPH	**105 HT07**	08/26/2020	EBS
p-Terphenyl 2X Dilution	NWEPH	**88.4 HT07**	08/26/2020	EBS

HT07 -Sample holding time expired prior to sample receipt. It was analyzed at the request of the client. Results should be considered estimated.

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Anatek Labs 1282 Alturas Dr. Moscow, ID 83843	DATE:	8/28/2020
		ALS JOB#:	EV20080079
		ALS SAMPLE#:	EV20080079-02
CLIENT CONTACT:	Todd Taruscio	DATE RECEIVED:	08/14/2020
CLIENT PROJECT:	MAG0582	COLLECTION DATE:	7/14/2020 2:00:00 PM
CLIENT SAMPLE ID	MAG0582-36 / GW-B44-071420	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
>C8-C10 Aliphatics	NWEPH	U, HT07	50	1	UG/L	08/26/2020	EBS
>C10-C12 Aliphatics	NWEPH	U, HT07	50	1	UG/L	08/26/2020	EBS
>C12-C16 Aliphatics	NWEPH	U, HT07	50	1	UG/L	08/26/2020	EBS
>C16-C21 Aliphatics	NWEPH	U, HT07	50	1	UG/L	08/26/2020	EBS
>C21-C34 Aliphatics	NWEPH	U, HT07	50	1	UG/L	08/26/2020	EBS
>C8-C10 Aromatics	NWEPH	U, HT07	50	1	UG/L	08/26/2020	EBS
>C10-C12 Aromatics	NWEPH	U, HT07	50	1	UG/L	08/26/2020	EBS
>C12-C16 Aromatics	NWEPH	U, HT07	50	1	UG/L	08/26/2020	EBS
>C16-C21 Aromatics	NWEPH	U, HT07	50	1	UG/L	08/26/2020	EBS
>C21-C34 Aromatics	NWEPH	U, HT07	50	1	UG/L	08/26/2020	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWEPH	**120 HT07**	08/26/2020	EBS
p-Terphenyl	NWEPH	**86.2 HT07**	08/26/2020	EBS

HT07 -Sample holding time expired prior to sample receipt. It was analyzed at the request of the client. Results should be considered estimated.

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT: Anatek Labs
1282 Alturas Dr.
Moscow, ID 83843

CLIENT CONTACT: Todd Taruscio
CLIENT PROJECT: MAG0582

DATE: 8/28/2020
ALS SDG#: EV20080079
WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MB-082120S - Batch 156849 - Soil by NWEPH

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
>C8-C10 Aliphatics	NWEPH	U	MG/KG	5.0	08/26/2020	EBS
>C10-C12 Aliphatics	NWEPH	U	MG/KG	5.0	08/26/2020	EBS
>C12-C16 Aliphatics	NWEPH	U	MG/KG	5.0	08/26/2020	EBS
>C16-C21 Aliphatics	NWEPH	U	MG/KG	5.0	08/26/2020	EBS
>C21-C34 Aliphatics	NWEPH	U	MG/KG	5.0	08/26/2020	EBS
>C8-C10 Aromatics	NWEPH	U	MG/KG	5.0	08/26/2020	EBS
>C10-C12 Aromatics	NWEPH	U	MG/KG	5.0	08/26/2020	EBS
>C12-C16 Aromatics	NWEPH	U	MG/KG	5.0	08/26/2020	EBS
>C16-C21 Aromatics	NWEPH	U	MG/KG	5.0	08/26/2020	EBS
>C21-C34 Aromatics	NWEPH	U	MG/KG	5.0	08/26/2020	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-081920W - Batch R367667 - Water by NWEPH

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
>C8-C10 Aliphatics	NWEPH	U	UG/L	50	08/26/2020	EBS
>C10-C12 Aliphatics	NWEPH	U	UG/L	50	08/26/2020	EBS
>C12-C16 Aliphatics	NWEPH	U	UG/L	50	08/26/2020	EBS
>C16-C21 Aliphatics	NWEPH	U	UG/L	50	08/26/2020	EBS
>C21-C34 Aliphatics	NWEPH	U	UG/L	50	08/26/2020	EBS
>C8-C10 Aromatics	NWEPH	U	UG/L	50	08/26/2020	EBS
>C10-C12 Aromatics	NWEPH	U	UG/L	50	08/26/2020	EBS
>C12-C16 Aromatics	NWEPH	U	UG/L	50	08/26/2020	EBS
>C16-C21 Aromatics	NWEPH	U	UG/L	50	08/26/2020	EBS
>C21-C34 Aromatics	NWEPH	U	UG/L	50	08/26/2020	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT: Anatek Labs
1282 Alturas Dr.
Moscow, ID 83843
CLIENT CONTACT: Todd Taruscio
CLIENT PROJECT: MAG0582

DATE: 8/28/2020
ALS SDG#: EV20080079
WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 156849 - Soil by NWEPH

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
>C8-C10 Aliphatics - BS	NWEPH	**91.6**			70	130	08/26/2020	EBS
>C8-C10 Aliphatics - BSD	NWEPH	**92.5**	**1**		70	130	08/26/2020	EBS
>C10-C12 Aliphatics - BS	NWEPH	**99.4**			70	130	08/26/2020	EBS
>C10-C12 Aliphatics - BSD	NWEPH	**101**	**1**		70	130	08/26/2020	EBS
>C12-C16 Aliphatics - BS	NWEPH	**108**			70	130	08/26/2020	EBS
>C12-C16 Aliphatics - BSD	NWEPH	**108**	**0**		70	130	08/26/2020	EBS
>C16-C21 Aliphatics - BS	NWEPH	**111**			70	130	08/26/2020	EBS
>C16-C21 Aliphatics - BSD	NWEPH	**113**	**1**		70	130	08/26/2020	EBS
>C21-C34 Aliphatics - BS	NWEPH	**110**			70	130	08/26/2020	EBS
>C21-C34 Aliphatics - BSD	NWEPH	**121**	**9**		70	130	08/26/2020	EBS
>C8-C10 Aromatics - BS	NWEPH	**91.2**			70	130	08/26/2020	EBS
>C8-C10 Aromatics - BSD	NWEPH	**84.5**	**8**		70	130	08/26/2020	EBS
>C10-C12 Aromatics - BS	NWEPH	**94.1**			70	130	08/26/2020	EBS
>C10-C12 Aromatics - BSD	NWEPH	**87.5**	**7**		70	130	08/26/2020	EBS
>C12-C16 Aromatics - BS	NWEPH	**94.4**			70	130	08/26/2020	EBS
>C12-C16 Aromatics - BSD	NWEPH	**88.8**	**6**		70	130	08/26/2020	EBS
>C16-C21 Aromatics - BS	NWEPH	**99.2**			70	130	08/26/2020	EBS
>C16-C21 Aromatics - BSD	NWEPH	**94.7**	**5**		70	130	08/26/2020	EBS
>C21-C34 Aromatics - BS	NWEPH	**105**			70	130	08/26/2020	EBS
>C21-C34 Aromatics - BSD	NWEPH	**100**	**5**		70	130	08/26/2020	EBS

ALS Test Batch ID: R367667 - Water by NWEPH

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
>C8-C10 Aliphatics - BS	NWEPH	**72.1**			70	130	08/26/2020	EBS
>C8-C10 Aliphatics - BSD	NWEPH	**82.0**	**13**		70	130	08/26/2020	EBS
>C10-C12 Aliphatics - BS	NWEPH	**77.9**			70	130	08/26/2020	EBS
>C10-C12 Aliphatics - BSD	NWEPH	**88.6**	**13**		70	130	08/26/2020	EBS
>C12-C16 Aliphatics - BS	NWEPH	**83.2**			70	130	08/26/2020	EBS
>C12-C16 Aliphatics - BSD	NWEPH	**95.5**	**14**		70	130	08/26/2020	EBS
>C16-C21 Aliphatics - BS	NWEPH	**87.6**			70	130	08/26/2020	EBS
>C16-C21 Aliphatics - BSD	NWEPH	**99.2**	**12**		70	130	08/26/2020	EBS
>C21-C34 Aliphatics - BS	NWEPH	**92.6**			70	130	08/26/2020	EBS
>C21-C34 Aliphatics - BSD	NWEPH	**98.6**	**6**		70	130	08/26/2020	EBS
>C8-C10 Aromatics - BS	NWEPH	**89.4**			70	130	08/26/2020	EBS
>C8-C10 Aromatics - BSD	NWEPH	**82.7**	**8**		70	130	08/26/2020	EBS
>C10-C12 Aromatics - BS	NWEPH	**92.0**			70	130	08/26/2020	EBS
>C10-C12 Aromatics - BSD	NWEPH	**84.6**	**8**		70	130	08/26/2020	EBS
>C12-C16 Aromatics - BS	NWEPH	**89.7**			70	130	08/26/2020	EBS

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CERTIFICATE OF ANALYSIS

CLIENT: Anatek Labs
1282 Alturas Dr.
Moscow, ID 83843
CLIENT CONTACT: Todd Taruscio
CLIENT PROJECT: MAG0582

DATE: 8/28/2020
ALS SDG#: EV20080079
WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
>C12-C16 Aromatics - BSD	NWEPH	**83.4**	**7**		70	130	08/26/2020	EBS
>C16-C21 Aromatics - BS	NWEPH	**92.5**			70	130	08/26/2020	EBS
>C16-C21 Aromatics - BSD	NWEPH	**86.1**	**7**		70	130	08/26/2020	EBS
>C21-C34 Aromatics - BS	NWEPH	**93.3**			70	130	08/26/2020	EBS
>C21-C34 Aromatics - BSD	NWEPH	**86.6**	**8**		70	130	08/26/2020	EBS

APPROVED BY

Laboratory Director

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EV20080079

Anatek Labs, Inc.

SUBCONTRACT ORDER

1282 Alturas Drive - Moscow, ID 83843 - (208) 8832839 - Fax (208) 8829246 - email moscow@anateklabs.com
504 E Sprague Ste. D - Spokane, WA 99202 - (509) 838-3999 - fax (509) 838-4433 - email spokane@anateklabs.com

Sending Laboratory:

Anatek Labs Inc, Moscow ID
1282 Alturas Drive
Moscow, ID 83843
Phone: 208-883-2839
Fax: 208-882-9246

Project Manager: Todd Taruscio
toddt@anateklabs.com

Subcontracted Laboratory:

ALS Environmental
~~1317 S 13th Ave~~
~~Kelso, WA 98626~~ Everett WA
Phone: (360) 577-7222
Fax: -

Work Order: MAG0582

Analysis	Due	Expires	Comments
Lab Sample ID: MAG0582-10 ***Solid*** ***Sampled: 07/14/2020 14:00***			
Client Sample Name: S-B32-3-5-071420			
EPH	07/29/2020	07/28/2020 14:00	
Containers Supplied:			
Lab Sample ID: MAG0582-36 ***Water*** ***Sampled: 07/14/2020 14:00***			
Client Sample Name: GW-B44-071420			
EPH	07/29/2020	07/28/2020 14:00	
Containers Supplied:			

Released By — Date: 08/13/2020

Received By: ALS — Date: 8/14/20 10:25 AM

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Client:	Pioneer Technologies Corporation	Work Order:	MAG0736
Address:	5205 Corporate Center Court-Suite A	Project:	Sunset Auburn
	Lacey, WA 98503	Reported:	12/9/2020 13:27
Attn:	Joel Hecker		

Case Narrative

The samples listed below were received for analysis at Anatek Labs, Inc. The analytical report is attached. All test results reported below comply with and meet current TNI standards, other applicable regulatory standards, and the Anatek Labs, Inc. Quality Assurance Manual, unless otherwise noted in the report.

The results in this report relate only to the samples analyzed. All soil and solid results are reported on a dryweight basis unless otherwise noted. An estimation of uncertainty is available upon request.

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For questions about this report, please contact Justin Doty at 208-883-2839.

Laboratory ID	Sample Name
MAG0736-01	GW-MW-01-072220
MAG0736-02	GW-MW-02-072220
MAG0736-03	GW-MW-03-072120
MAG0736-04	GW-MW-04e-072220
MAG0736-05	GW-MW-05-072220
MAG0736-06	GW-MW-06-072120
MAG0736-07	GW-MW-07-072120
MAG0736-08	GW-MW-08-072220
MAG0736-09	GW-MW-09-072120
MAG0736-10	GW-MW-10-072220
MAG0736-11	GW-MW-11-072220
MAG0736-12	GW-MW-13e-072120
MAG0736-13	GW-MW-10-072220-01

QA/QC Summary

QC Parameter		Yes / No (if No, see Comments below)
1. Sample Holding Time Valid?	Yes	
2. Instrument Tunes Valid?		Yes
3. Method Blank(s) Valid?		Yes
4. Internal Standard Response(s) Valid?		Yes
5. Initial Calibration Curve(s) Valid?		Yes
6. Continuing Calibration(s) Valid?		Yes

Comments:

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Analytical Results Report

Sample Location: GW-MW-01-072220
Lab/Sample Number: MAG0736-01 Collect Date: 07/22/20 14:09
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS							
Dissolved Arsenic	0.00424	mg/L	0.00100	8/5/20 0:08	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.00100	8/5/20 0:08	MYM	EPA 200.8	
Volatiles							
Gasoline	ND	mg/L	0.200	7/29/20 14:59	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*99.2%*		*70-130*	*7/29/20 14:59*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	2.54	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	0.630	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
2-hexanone	ND	ug/L	2.50	7/29/20 14:59	TEC	EPA 8260C	
Acetone	5.78	ug/L	2.50	7/29/20 14:59	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Benzene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-01-072220
Lab/Sample Number: MAG0736-01 Collect Date: 07/22/20 14:09
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)							
cis-1,3-Dichloropropene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
DBCP	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
EDB	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Ethylbenzene	1.11	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Hexachlorobutadiene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Isopropylbenzene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	3.94	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	2.50	7/29/20 14:59	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	2.50	7/29/20 14:59	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	2.50	7/29/20 14:59	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Naphthalene	1.50	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
n-Butylbenzene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
n-Propylbenzene	0.510	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
o-Xylene (MCL for total)	2.62	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
sec-Butylbenzene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Styrene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Toluene	5.29	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.500	7/29/20 14:59	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*110%*		*70-130*	*7/29/20 14:59*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*91.3%*		*70-130*	*7/29/20 14:59*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*101%*		*70-130*	*7/29/20 14:59*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-02-072220
Lab/Sample Number: MAG0736-02 Collect Date: 07/22/20 15:02
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS							
Dissolved Arsenic	0.0101	mg/L	0.00100	8/5/20 0:15	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.00100	8/5/20 0:15	MYM	EPA 200.8	
Volatiles							
Gasoline	ND	mg/L	0.200	7/29/20 15:29	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*97.2%*		*70-130*	*7/29/20 15:29*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	1.30	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
2-hexanone	ND	ug/L	2.50	7/29/20 15:29	TEC	EPA 8260C	
Acetone	ND	ug/L	2.50	7/29/20 15:29	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Benzene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-02-072220
Lab/Sample Number: MAG0736-02 Collect Date: 07/22/20 15:02
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)							
cis-1,3-Dichloropropene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
DBCP	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
EDB	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Ethylbenzene	0.920	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Hexachlorobutadiene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Isopropylbenzene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	2.54	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	2.50	7/29/20 15:29	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	2.50	7/29/20 15:29	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	2.50	7/29/20 15:29	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Naphthalene	0.980	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
n-Butylbenzene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
n-Propylbenzene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
o-Xylene (MCL for total)	1.68	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
sec-Butylbenzene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Styrene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Toluene	3.17	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.500	7/29/20 15:29	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*113%*		*70-130*	*7/29/20 15:29*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*90.4%*		*70-130*	*7/29/20 15:29*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*84.7%*		*70-130*	*7/29/20 15:29*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-03-072120
Lab/Sample Number: MAG0736-03 Collect Date: 07/21/20 14:33
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS							
Dissolved Arsenic	0.00459	mg/L	0.00100	8/5/20 0:21	MYM	EPA 200.8	
Dissolved Lead	0.00165	mg/L	0.00100	8/5/20 0:21	MYM	EPA 200.8	
Volatiles							
Gasoline	30.5	mg/L	5.00	7/29/20 20:02	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*121%*		*70-130*	*7/29/20 20:02*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	941	ug/L	50.0	8/3/20 18:07	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	282	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
2-hexanone	ND	ug/L	62.5	8/3/20 18:07	TEC	EPA 8260C	
Acetone	ND	ug/L	62.5	8/3/20 18:07	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Benzene	314	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Bromoform	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Bromomethane	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Chloroethane	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Chloroform	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Chloromethane	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-03-072120
Lab/Sample Number: MAG0736-03 Collect Date: 07/21/20 14:33
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)							
cis-1,3-Dichloropropene	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
DBCP	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
EDB	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Ethylbenzene	2280	ug/L	50.0	8/3/20 18:07	TEC	EPA 8260C	
Hexachlorobutadiene	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Isopropylbenzene	40.5	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	6050	ug/L	500	8/3/20 18:07	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	62.5	8/3/20 18:07	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	62.5	8/3/20 18:07	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	62.5	8/3/20 18:07	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Naphthalene	385	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
n-Butylbenzene	15.2	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
n-Propylbenzene	102	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
o-Xylene (MCL for total)	623	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
sec-Butylbenzene	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Styrene	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Toluene	201	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	12.5	8/3/20 18:07	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*109%*		*70-130*	*8/3/20 18:07*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*91.4%*		*70-130*	*8/3/20 18:07*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*102%*		*70-130*	*8/3/20 18:07*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-04e-072220
Lab/Sample Number: MAG0736-04 Collect Date: 07/22/20 09:08
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS							
Dissolved Arsenic	ND	mg/L	0.00100	8/5/20 0:28	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.00100	8/5/20 0:28	MYM	EPA 200.8	
Volatiles							
Gasoline	ND	mg/L	0.200	7/29/20 16:00	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*98.8%*		*70-130*	*7/29/20 16:00*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	1.86	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	0.520	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
2-hexanone	ND	ug/L	2.50	7/29/20 16:00	TEC	EPA 8260C	
Acetone	3.85	ug/L	2.50	7/29/20 16:00	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Benzene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-04e-072220
Lab/Sample Number: MAG0736-04 Collect Date: 07/22/20 09:08
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)							
cis-1,3-Dichloropropene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
DBCP	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
EDB	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Ethylbenzene	0.780	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Hexachlorobutadiene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Isopropylbenzene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	2.31	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	2.50	7/29/20 16:00	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	2.50	7/29/20 16:00	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	2.50	7/29/20 16:00	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Naphthalene	2.33	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
n-Butylbenzene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
n-Propylbenzene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
o-Xylene (MCL for total)	1.62	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
sec-Butylbenzene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Styrene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Toluene	3.28	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.500	7/29/20 16:00	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*113%*		*70-130*	*7/29/20 16:00*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*90.8%*		*70-130*	*7/29/20 16:00*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*96.9%*		*70-130*	*7/29/20 16:00*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-05-072220
Lab/Sample Number: MAG0736-05 Collect Date: 07/22/20 12:51
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS							
Dissolved Arsenic	0.0148	mg/L	0.00100	8/5/20 0:34	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.00100	8/5/20 0:34	MYM	EPA 200.8	
Volatiles							
Gasoline	0.550	mg/L	0.200	7/30/20 2:55	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*106%*		*70-130*	*7/30/20 2:55*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	1.70	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
2-hexanone	ND	ug/L	2.50	7/30/20 2:55	TEC	EPA 8260C	
Acetone	2.88	ug/L	2.50	7/30/20 2:55	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Benzene	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-05-072220
Lab/Sample Number: MAG0736-05 Collect Date: 07/22/20 12:51
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)							
cis-1,3-Dichloropropene	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
DBCP	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
EDB	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Ethylbenzene	1.02	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Hexachlorobutadiene	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Isopropylbenzene	1.27	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	3.30	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	2.50	7/30/20 2:55	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	2.50	7/30/20 2:55	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	2.50	7/30/20 2:55	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Naphthalene	1.66	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
n-Butylbenzene	4.05	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
n-Propylbenzene	3.29	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
o-Xylene (MCL for total)	2.18	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
sec-Butylbenzene	3.79	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Styrene	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Toluene	3.45	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.500	7/30/20 2:55	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*112%*		*70-130*	*7/30/20 2:55*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*94.4%*		*70-130*	*7/30/20 2:55*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*91.2%*		*70-130*	*7/30/20 2:55*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-06-072120
Lab/Sample Number: MAG0736-06 Collect Date: 07/21/20 12:17
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS							
Dissolved Arsenic	ND	mg/L	0.00100	8/5/20 0:41	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.00100	8/5/20 0:41	MYM	EPA 200.8	
Volatiles							
Gasoline	6.30	mg/L	2.00	7/29/20 23:00	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*108%*		*70-130*	*7/29/20 23:00*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	24.9	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	8.20	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
2-hexanone	ND	ug/L	25.0	7/29/20 23:00	TEC	EPA 8260C	
Acetone	ND	ug/L	25.0	7/29/20 23:00	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Benzene	44.3	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Bromoform	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Bromomethane	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Chloroethane	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Chloroform	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Chloromethane	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-06-072120
Lab/Sample Number: MAG0736-06 Collect Date: 07/21/20 12:17
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)							
cis-1,3-Dichloropropene	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
DBCP	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
EDB	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Ethylbenzene	160	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Hexachlorobutadiene	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Isopropylbenzene	28.3	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	66.6	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	25.0	7/29/20 23:00	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	25.0	7/29/20 23:00	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	25.0	7/29/20 23:00	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Naphthalene	222	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
n-Butylbenzene	7.30	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
n-Propylbenzene	78.1	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
o-Xylene (MCL for total)	7.00	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
sec-Butylbenzene	6.30	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Styrene	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Toluene	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	5.00	7/29/20 23:00	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*114%*		*70-130*	*7/29/20 23:00*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*97.9%*		*70-130*	*7/29/20 23:00*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*100%*		*70-130*	*7/29/20 23:00*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-07-072120
Lab/Sample Number: MAG0736-07 Collect Date: 07/21/20 16:19
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS							
Dissolved Arsenic	0.00153	mg/L	0.00100	8/5/20 0:47	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.00100	8/5/20 0:47	MYM	EPA 200.8	
Volatiles							
Gasoline	0.440	mg/L	0.200	7/29/20 17:00	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*104%*		*70-130*	*7/29/20 17:00*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	3.63	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	0.860	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
2-hexanone	ND	ug/L	2.50	7/29/20 17:00	TEC	EPA 8260C	
Acetone	6.95	ug/L	2.50	7/29/20 17:00	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Benzene	24.7	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Carbon disulfide	2.16	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-07-072120
Lab/Sample Number: MAG0736-07 Collect Date: 07/21/20 16:19
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)							
cis-1,3-Dichloropropene	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
DBCP	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
EDB	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Ethylbenzene	2.26	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Hexachlorobutadiene	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Isopropylbenzene	2.52	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	6.58	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	2.50	7/29/20 17:00	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	2.50	7/29/20 17:00	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	2.50	7/29/20 17:00	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Naphthalene	10.4	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
n-Butylbenzene	1.74	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
n-Propylbenzene	7.66	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
o-Xylene (MCL for total)	3.90	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
sec-Butylbenzene	0.900	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Styrene	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Toluene	5.10	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.500	7/29/20 17:00	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*114%*		*70-130*	*7/29/20 17:00*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*96.8%*		*70-130*	*7/29/20 17:00*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*85.6%*		*70-130*	*7/29/20 17:00*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-08-072220
Lab/Sample Number: MAG0736-08 Collect Date: 07/22/20 08:21
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS							
Dissolved Arsenic	0.00370	mg/L	0.00100	8/5/20 0:54	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.00100	8/5/20 0:54	MYM	EPA 200.8	
Volatiles							
Gasoline	ND	mg/L	0.200	7/29/20 17:31	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*101%*		*70-130*	*7/29/20 17:31*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	1.47	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	0.510	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
2-hexanone	ND	ug/L	2.50	7/29/20 17:31	TEC	EPA 8260C	
Acetone	2.76	ug/L	2.50	7/29/20 17:31	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Benzene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Carbon disulfide	4.08	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-08-072220
Lab/Sample Number: MAG0736-08 Collect Date: 07/22/20 08:21
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)							
cis-1,3-Dichloropropene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
DBCP	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
EDB	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Ethylbenzene	1.17	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Hexachlorobutadiene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Isopropylbenzene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	3.12	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	2.50	7/29/20 17:31	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	2.50	7/29/20 17:31	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	2.50	7/29/20 17:31	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Naphthalene	3.68	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
n-Butylbenzene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
n-Propylbenzene	0.550	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
o-Xylene (MCL for total)	2.10	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
sec-Butylbenzene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Styrene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Toluene	4.24	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.500	7/29/20 17:31	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*110%*		*70-130*	*7/29/20 17:31*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*92.1%*		*70-130*	*7/29/20 17:31*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*89.7%*		*70-130*	*7/29/20 17:31*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-09-072120
Lab/Sample Number: MAG0736-09 Collect Date: 07/21/20 15:30
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS							
Dissolved Arsenic	0.0138	mg/L	0.00100	8/5/20 1:20	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.00100	8/5/20 1:20	MYM	EPA 200.8	
Volatiles							
Gasoline	2.10	mg/L	2.00	7/29/20 21:02	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*102%*		*70-130*	*7/29/20 21:02*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	2.98	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	0.870	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
2-hexanone	ND	ug/L	2.50	7/30/20 3:24	TEC	EPA 8260C	
Acetone	10.6	ug/L	2.50	7/30/20 3:24	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Benzene	85.0	ug/L	5.00	7/30/20 3:24	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-09-072120
Lab/Sample Number: MAG0736-09 Collect Date: 07/21/20 15:30
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)							
cis-1,3-Dichloropropene	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
DBCP	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
EDB	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Ethylbenzene	9.80	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Hexachlorobutadiene	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Isopropylbenzene	20.6	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	6.72	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	2.50	7/30/20 3:24	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	2.50	7/30/20 3:24	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	2.50	7/30/20 3:24	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Naphthalene	4.53	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
n-Butylbenzene	4.14	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
n-Propylbenzene	51.6	ug/L	5.00	7/30/20 3:24	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
o-Xylene (MCL for total)	2.61	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
sec-Butylbenzene	3.47	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Styrene	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Toluene	3.93	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.500	7/30/20 3:24	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*106%*		*70-130*	*7/30/20 3:24*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*96.4%*		*70-130*	*7/30/20 3:24*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*78.3%*		*70-130*	*7/30/20 3:24*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-10-072220
Lab/Sample Number: MAG0736-10 Collect Date: 07/22/20 11:40
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS							
Dissolved Arsenic	0.00154	mg/L	0.00100	8/5/20 1:53	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.00100	8/5/20 1:53	MYM	EPA 200.8	
Volatiles							
Gasoline	ND	mg/L	0.200	7/29/20 18:01	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*96.0%*		*70-130*	*7/29/20 18:01*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	0.810	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
2-hexanone	ND	ug/L	2.50	7/29/20 18:01	TEC	EPA 8260C	
Acetone	4.33	ug/L	2.50	7/29/20 18:01	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Benzene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Carbon disulfide	1.16	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-10-072220
Lab/Sample Number: MAG0736-10 Collect Date: 07/22/20 11:40
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)							
cis-1,3-Dichloropropene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
DBCP	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
EDB	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Ethylbenzene	0.830	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Hexachlorobutadiene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Isopropylbenzene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	1.59	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	2.50	7/29/20 18:01	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	2.50	7/29/20 18:01	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	2.50	7/29/20 18:01	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Naphthalene	2.02	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
n-Butylbenzene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
n-Propylbenzene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
o-Xylene (MCL for total)	1.25	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
sec-Butylbenzene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Styrene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Toluene	3.06	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.500	7/29/20 18:01	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*113%*		*70-130*	*7/29/20 18:01*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*87.9%*		*70-130*	*7/29/20 18:01*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*82.4%*		*70-130*	*7/29/20 18:01*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-11-072220
Lab/Sample Number: MAG0736-11 Collect Date: 07/22/20 10:30
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS							
Dissolved Arsenic	0.0138	mg/L	0.00100	8/5/20 2:00	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.00100	8/5/20 2:00	MYM	EPA 200.8	
Volatiles							
Gasoline	1.77	mg/L	0.200	7/29/20 18:32	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*106%*		*70-130*	*7/29/20 18:32*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	18.6	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	2.83	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
2-hexanone	ND	ug/L	2.50	7/29/20 18:32	TEC	EPA 8260C	
Acetone	4.35	ug/L	2.50	7/29/20 18:32	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Benzene	3.82	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-11-072220
Lab/Sample Number: MAG0736-11 Collect Date: 07/22/20 10:30
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)							
cis-1,3-Dichloropropene	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
DBCP	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
EDB	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Ethylbenzene	23.4	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Hexachlorobutadiene	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Isopropylbenzene	15.7	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	44.7	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	2.50	7/29/20 18:32	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	2.50	7/29/20 18:32	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	2.50	7/29/20 18:32	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Naphthalene	60.6	ug/L	5.00	7/29/20 18:32	TEC	EPA 8260C	
n-Butylbenzene	4.20	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
n-Propylbenzene	32.4	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
o-Xylene (MCL for total)	11.0	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
sec-Butylbenzene	3.11	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Styrene	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Toluene	3.75	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.500	7/29/20 18:32	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*117%*		*70-130*	*7/29/20 18:32*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*95.9%*		*70-130*	*7/29/20 18:32*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*89.5%*		*70-130*	*7/29/20 18:32*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-13e-072120
Lab/Sample Number: MAG0736-12 Collect Date: 07/21/20 10:53
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS							
Dissolved Arsenic	ND	mg/L	0.00100	8/5/20 2:20	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.00100	8/5/20 2:20	MYM	EPA 200.8	
Volatiles							
Gasoline	ND	mg/L	0.200	7/29/20 19:02	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*99.6%*		*70-130*	*7/29/20 19:02*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	1.81	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
2-hexanone	ND	ug/L	2.50	7/29/20 19:02	TEC	EPA 8260C	
Acetone	5.84	ug/L	2.50	7/29/20 19:02	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Benzene	0.530	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Carbon disulfide	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-13e-072120
Lab/Sample Number: MAG0736-12 Collect Date: 07/21/20 10:53
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)							
cis-1,3-Dichloropropene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
DBCP	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
EDB	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Ethylbenzene	1.18	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Hexachlorobutadiene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Isopropylbenzene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	3.22	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	2.50	7/29/20 19:02	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	2.50	7/29/20 19:02	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	2.50	7/29/20 19:02	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Naphthalene	3.46	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
n-Butylbenzene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
n-Propylbenzene	0.580	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
o-Xylene (MCL for total)	2.18	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
sec-Butylbenzene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Styrene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Toluene	5.66	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.500	7/29/20 19:02	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*113%*		*70-130*	*7/29/20 19:02*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*90.6%*		*70-130*	*7/29/20 19:02*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*104%*		*70-130*	*7/29/20 19:02*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-10-072220-01
Lab/Sample Number: MAG0736-13 Collect Date: 07/22/20 11:40
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Metals by ICP-MS							
Dissolved Arsenic	0.00163	mg/L	0.00100	8/5/20 2:26	MYM	EPA 200.8	
Dissolved Lead	ND	mg/L	0.00100	8/5/20 2:26	MYM	EPA 200.8	
Volatiles							
Gasoline	ND	mg/L	0.200	7/29/20 19:32	TEC	NWTPH-Gx	
Surrogate: 4-Bromofluorobenzene	*96.0%*		*70-130*	*7/29/20 19:32*	*TEC*	*NWTPH-Gx*	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
1,1,1-Trichloroethane	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
1,1,2-Trichlorethane	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
1,1-Dichloroethane	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
1,1-Dichloroethylene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
1,1-Dichloropropene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
1,2,3-Trichlorobenzene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
1,2,3-Trichloropropane	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
1,2,4-Trichlorobenzene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
1,2,4-Trimethylbenzene	0.820	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
1,2-Dichloroethane	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
1,2-Dichloropropane	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
1,3,5-Trimethylbenzene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
1,3-Dichloropropane	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
1,4-Dichlorobenzene (para-Dichlorobenzene)	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
2,2-Dichloropropane	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
2-hexanone	ND	ug/L	2.50	7/29/20 19:32	TEC	EPA 8260C	
Acetone	4.22	ug/L	2.50	7/29/20 19:32	TEC	EPA 8260C	
Acrylonitrile	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Benzene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Bromobenzene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Bromochloromethane	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Bromodichloromethane	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Bromoform	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Bromomethane	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Carbon disulfide	1.21	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Carbon Tetrachloride	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Chlorobenzene (Monochlorobenzene)	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Chloroethane	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Chloroform	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Chloromethane	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
cis-1,2-Dichloroethylene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: GW-MW-10-072220-01
Lab/Sample Number: MAG0736-13 Collect Date: 07/22/20 11:40
Date Received: 07/23/20 12:46 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles (Continued)							
cis-1,3-Dichloropropene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
DBCP	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Dibromochloromethane	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Dibromomethane	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Dichlorodifluoromethane	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
EDB	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Ethylbenzene	0.790	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Hexachlorobutadiene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Isopropylbenzene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
m/p Xylenes (MCL for total)	1.56	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
m-Dichlorobenzene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Methyl ethyl ketone (MEK)	ND	ug/L	2.50	7/29/20 19:32	TEC	EPA 8260C	
Methyl isobutyl ketone (MIBK)	ND	ug/L	2.50	7/29/20 19:32	TEC	EPA 8260C	
Methylene Chloride (Dichloromethane)	ND	ug/L	2.50	7/29/20 19:32	TEC	EPA 8260C	
methyl-t-butyl ether (MTBE)	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Naphthalene	2.01	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
n-Butylbenzene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
n-Propylbenzene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
o-Chlorotoluene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
o-Xylene (MCL for total)	1.29	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
p-Chlorotoluene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
p-isopropyltoluene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
sec-Butylbenzene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Styrene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
tert-Butylbenzene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Tetrachloroethylene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Toluene	3.36	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
trans-1,2 Dichloroethylene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
trans-1,3-Dichloropropene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Trichloroethene	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Trichloroflouromethane	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Vinyl Chloride	ND	ug/L	0.500	7/29/20 19:32	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*113%*		*70-130*	*7/29/20 19:32*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*86.7%*		*70-130*	*7/29/20 19:32*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*86.0%*		*70-130*	*7/29/20 19:32*	*TEC*	*EPA 8260C*	

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Authorized Signature,



Justin Doty For Todd Taruscio, Laboratory Manager

PQL	Practical Quantitation Limit
ND	Not Detected
MCL	EPA's Maximum Contaminant Level
Dry	Sample results reported on a dry weight basis

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The results reported related only to the samples indicated.

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Quality Control Data

Metals by ICP-MS

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAH0053 - ICP-MS_D										
Blank (BAH0053-BLK1)					Prepared: 8/3/2020 Analyzed: 8/4/2020					
Dissolved Lead	ND		0.00100	mg/L						
Dissolved Arsenic	ND		0.00100	mg/L						
LCS (BAH0053-BS1)					Prepared: 8/3/2020 Analyzed: 8/4/2020					
Dissolved Arsenic	0.0480		0.00100	mg/L	0.0500		96.0	85-115		
Dissolved Lead	0.0471		0.00100	mg/L	0.0500		94.3	85-115		
Matrix Spike (BAH0053-MS1)		**Source: MAG0582-22**			Prepared: 8/3/2020 Analyzed: 8/4/2020					
Dissolved Arsenic	0.468		0.0100	mg/L	0.500	0.00216	93.1	70-130		
Dissolved Lead	0.470		0.0100	mg/L	0.500	ND	94.0	70-130		
Matrix Spike (BAH0053-MS2)		**Source: MAG0582-35**			Prepared: 8/3/2020 Analyzed: 8/4/2020					
Dissolved Arsenic	0.490		0.0100	mg/L	0.500	ND	98.0	70-130		
Dissolved Lead	0.523		0.0100	mg/L	0.500	ND	105	70-130		
Matrix Spike Dup (BAH0053-MSD1)		**Source: MAG0582-22**			Prepared: 8/3/2020 Analyzed: 8/4/2020					
Dissolved Arsenic	0.489		0.0100	mg/L	0.500	0.00216	97.5	70-130	4.59	20
Dissolved Lead	0.479		0.0100	mg/L	0.500	ND	95.8	70-130	1.96	20
Matrix Spike Dup (BAH0053-MSD2)		**Source: MAG0582-35**			Prepared: 8/3/2020 Analyzed: 8/4/2020					
Dissolved Lead	0.507		0.0100	mg/L	0.500	ND	101	70-130	2.96	20
Dissolved Arsenic	0.488		0.0100	mg/L	0.500	ND	97.7	70-130	0.305	20
Batch: BAH0125 - ICP-MS_D										
Blank (BAH0125-BLK1)					Prepared: 8/3/2020 Analyzed: 8/5/2020					
Dissolved Arsenic	ND		0.00100	mg/L						
Dissolved Lead	ND		0.00100	mg/L						

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Quality Control Data
(Continued)

Metals by ICP-MS (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAH0125 - ICP-MS_D (Continued)										
LCS (BAH0125-BS1)					Prepared: 8/3/2020 Analyzed: 8/5/2020					
Dissolved Arsenic	47.1			ug/L	50.0		94.2	85-115		
Dissolved Lead	53.1			ug/L	50.0		106	85-115		
Matrix Spike (BAH0125-MS1)		**Source: MAG0736-11**			Prepared: 8/3/2020 Analyzed: 8/5/2020					
Dissolved Arsenic	49.2			ug/L	50.0	1.38	95.6	70-130		
Dissolved Lead	53.0			ug/L	50.0	0.00410	106	70-130		
Matrix Spike Dup (BAH0125-MSD1)		**Source: MAG0736-11**			Prepared: 8/3/2020 Analyzed: 8/5/2020					
Dissolved Arsenic	47.5			ug/L	50.0	1.38	92.3	70-130	3.44	20
Dissolved Lead	51.9			ug/L	50.0	0.00410	104	70-130	2.01	20

Quality Control Data
(Continued)

Volatiles

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0917 - VOC										
Blank (BAG0917-BLK1)					Prepared & Analyzed: 7/29/2020					
Gasoline	ND		0.200	mg/L						
Surrogate: 4-Bromofluorobenzene			*0.0238*	*mg/L*	*0.0250*		*95.2*	*70-130*		
LCS (BAG0917-BS1)					Prepared & Analyzed: 7/29/2020					
Gasoline	0.800		0.200	mg/L	1.00		80.0	80-120		
Surrogate: 4-Bromofluorobenzene			*0.0244*	*mg/L*	*0.0250*		*97.6*	*70-130*		
Matrix Spike (BAG0917-MS1)		**Source: MAG0736-02**			Prepared: 7/29/2020 Analyzed: 7/30/2020					
Gasoline	0.720		0.200	mg/L	1.00	0.120	60.0	50-150		
Surrogate: 4-Bromofluorobenzene			*0.0266*	*mg/L*	*0.0250*		*106*	*70-130*		
Matrix Spike Dup (BAG0917-MSD1)		**Source: MAG0736-02**			Prepared: 7/29/2020 Analyzed: 7/30/2020					
Gasoline	0.740		0.200	mg/L	1.00	0.120	62.0	50-150	2.74	25
Surrogate: 4-Bromofluorobenzene			*0.0256*	*mg/L*	*0.0250*		*102*	*70-130*		
Batch: BAG0919 - VOC										
Blank (BAG0919-BLK1)					Prepared & Analyzed: 7/29/2020					
Chloromethane	ND		0.500	ug/L						
Methyl ethyl ketone (MEK)	ND		2.50	ug/L						
m+p-Xylene	ND		0.500	ug/L						
Isopropylbenzene	ND		0.500	ug/L						
Hexachlorobutadiene	ND		0.500	ug/L						
Ethylbenzene	ND		0.500	ug/L						
Dichlorodifluoromethane	ND		0.500	ug/L						
Dibromomethane	ND		0.500	ug/L						
Dibromochloromethane	ND		0.500	ug/L						
cis-1,2-dichloroethene	ND		0.500	ug/L						
Vinyl Chloride	ND		0.500	ug/L						
Chloroform	ND		0.500	ug/L						

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0919 - VOC (Continued)										
Blank (BAG0919-BLK1)					Prepared & Analyzed: 7/29/2020					
Chloroethane	ND		0.500	ug/L						
Chlorobenzene	ND		0.500	ug/L						
Methyl isobutyl ketone (MIBK)	ND		2.50	ug/L						
cis-1,3-Dichloropropene	ND		0.500	ug/L						
tert-Butylbenzene	ND		0.500	ug/L						
Naphthalene	ND		0.500	ug/L						
Trichlorofluoromethane	ND		0.500	ug/L						
Carbon Tetrachloride	ND		0.500	ug/L						
trans-1,3-Dichloropropene	ND		0.500	ug/L						
trans-1,2-Dichloroethene	ND		0.500	ug/L						
Trichloroethene	ND		0.500	ug/L						
Tetrachloroethene	ND		0.500	ug/L						
Methylene chloride	ND		2.50	ug/L						
Styrene	ND		0.500	ug/L						
sec-Butylbenzene	ND		0.500	ug/L						
p-isopropyltoluene	ND		0.500	ug/L						
o-Xylene	ND		0.500	ug/L						
n-Butylbenzene	ND		0.500	ug/L						
methyl-t-butyl ether (MTBE)	ND		0.500	ug/L						
Toluene	ND		0.500	ug/L						
1,1-dichloropropene	ND		0.500	ug/L						
1,2-Dichlorobenzene	ND		0.500	ug/L						
1,2-Dibromoethane (EDB)	ND		0.500	ug/L						
1,2-Dibromo-3-chloropropane(DBCP)	ND		0.500	ug/L						
1,2,4-Trimethylbenzene	ND		0.500	ug/L						
1,2,4-Trichlorobenzene	ND		0.500	ug/L						
1,2-Dichloroethane	ND		0.500	ug/L						
1,2,3-Trichlorobenzene	ND		0.500	ug/L						
1,1,2-Trichloroethane	ND		0.500	ug/L						
1,1-Dichloroethene	ND		0.500	ug/L						
1,1-Dichloroethane	ND		0.500	ug/L						
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L						
1,1,1,2-Tetrachloroethane	ND		0.500	ug/L						
1,1,1-Trichloroethane	ND		0.500	ug/L						
Carbon disulfide	ND		0.500	ug/L						
n-Propylbenzene	ND		0.500	ug/L						
1,2,3-Trichloropropane	ND		0.500	ug/L						
1,2-Dichloropropane	ND		0.500	ug/L						
Bromoform	ND		0.500	ug/L						
Bromochloromethane	ND		0.500	ug/L						
Benzene	ND		0.500	ug/L						
Acrylonitrile	ND		0.500	ug/L						
4-Chlorotoluene	ND		0.500	ug/L						
Bromobenzene	ND		0.500	ug/L						
2-hexanone	ND		2.50	ug/L						
2-Chlorotoluene	ND		0.500	ug/L						
2,2-Dichloropropane	ND		0.500	ug/L						
1,4-Dichlorobenzene	ND		0.500	ug/L						
1,3-Dichloropropane	ND		0.500	ug/L						
1,3-Dichlorobenzene	ND		0.500	ug/L						
Bromomethane	ND		0.500	ug/L						
1,3,5-Trimethylbenzene	ND		0.500	ug/L						
Bromodichloromethane	ND		0.500	ug/L						

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0919 - VOC (Continued)										
Blank (BAG0919-BLK1)					Prepared & Analyzed: 7/29/2020					
Acetone	ND		2.50	ug/L						
Surrogate: Toluene-d8			*24.9*	*ug/L*	*25.0*		*99.6*	*70-130*		
Surrogate: 4-Bromofluorobenzene			*21.4*	*ug/L*	*25.0*		*85.6*	*70-130*		
Surrogate: 1,2-Dichlorobenzene-d4			*22.3*	*ug/L*	*19.0*		*118*	*70-130*		
LCS (BAG0919-BS1)					Prepared & Analyzed: 7/29/2020					
Hexachlorobutadiene	10.5		0.500	ug/L	10.0		105	80-120		
Methyl isobutyl ketone (MIBK)	8.23		2.50	ug/L	10.0		82.3	80-120		
Methyl ethyl ketone (MEK)	10.4		2.50	ug/L	10.0		104	80-120		
m+p-Xylene	19.1		0.500	ug/L	20.0		95.3	80-120		
Isopropylbenzene	9.70		0.500	ug/L	10.0		97.0	80-120		
Ethylbenzene	9.69		0.500	ug/L	10.0		96.9	80-120		
Dichlorodifluoromethane	8.48		0.500	ug/L	10.0		84.8	80-120		
Dibromomethane	9.42		0.500	ug/L	10.0		94.2	80-120		
Dibromochloromethane	10.5		0.500	ug/L	10.0		105	80-120		
cis-1,3-Dichloropropene	9.78		0.500	ug/L	10.0		97.8	80-120		
Chloroform	9.12		0.500	ug/L	10.0		91.2	80-120		
trans-1,2-Dichloroethene	9.69		0.500	ug/L	10.0		96.9	80-120		
Chloroethane	9.95		0.500	ug/L	10.0		99.5	80-120		
Chlorobenzene	9.76		0.500	ug/L	10.0		97.6	80-120		
cis-1,2-dichloroethene	9.55		0.500	ug/L	10.0		95.5	80-120		
Toluene	9.62		0.500	ug/L	10.0		96.2	80-120		
n-Propylbenzene	9.30		0.500	ug/L	10.0		93.0	80-120		
o-Xylene	9.45		0.500	ug/L	10.0		94.5	80-120		
1,2-Dichloroethane	9.03		0.500	ug/L	10.0		90.3	80-120		
Carbon Tetrachloride	10.4		0.500	ug/L	10.0		104	80-120		
sec-Butylbenzene	9.64		0.500	ug/L	10.0		96.4	80-120		
Styrene	9.18		0.500	ug/L	10.0		91.8	80-120		
Trichloroethene	10.4		0.500	ug/L	10.0		104	80-120		
Tetrachloroethene	10.9		0.500	ug/L	10.0		109	80-120		
methyl-t-butyl ether (MTBE)	9.78		0.500	ug/L	10.0		97.8	80-120		
trans-1,3-Dichloropropene	9.74		0.500	ug/L	10.0		97.4	80-120		
p-isopropyltoluene	9.80		0.500	ug/L	10.0		98.0	80-120		
Trichlorofluoromethane	10.6		0.500	ug/L	10.0		106	80-120		
Vinyl Chloride	9.69		0.500	ug/L	10.0		96.9	80-120		
Naphthalene	9.58		0.500	ug/L	10.0		95.8	80-120		
tert-Butylbenzene	9.67		0.500	ug/L	10.0		96.7	80-120		
1,1-Dichloroethene	10.6		0.500	ug/L	10.0		106	80-120		
1,3,5-Trimethylbenzene	9.81		0.500	ug/L	10.0		98.1	80-120		
1,2-Dibromo-3-chloropropane(DBCP)	9.47		0.500	ug/L	10.0		94.7	80-120		
1,2,4-Trimethylbenzene	9.44		0.500	ug/L	10.0		94.4	80-120		
1,2,4-Trichlorobenzene	9.88		0.500	ug/L	10.0		98.8	80-120		
1,2,3-Trichloropropane	9.53		0.500	ug/L	10.0		95.3	80-120		
1,2-Dichlorobenzene	9.42		0.500	ug/L	10.0		94.2	80-120		
1,1-dichloropropene	10.7		0.500	ug/L	10.0		107	80-120		
1,1-Dichloroethane	9.37		0.500	ug/L	10.0		93.7	80-120		
1,1,2-Trichloroethane	10.7		0.500	ug/L	10.0		107	80-120		
1,1,2,2-Tetrachloroethane	9.10		0.500	ug/L	10.0		91.0	80-120		
1,1,1-Trichloroethane	9.91		0.500	ug/L	10.0		99.1	80-120		
1,1,1,2-Tetrachloroethane	10.4		0.500	ug/L	10.0		104	80-120		
n-Butylbenzene	9.47		0.500	ug/L	10.0		94.7	80-120		
1,2,3-Trichlorobenzene	10.2		0.500	ug/L	10.0		102	80-120		

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0919 - VOC (Continued)										
LCS (BAG0919-BS1)					Prepared & Analyzed: 7/29/2020					
Bromoform	9.53		0.500	ug/L	10.0		95.3	80-120		
Bromodichloromethane	9.16		0.500	ug/L	10.0		91.6	80-120		
Bromochloromethane	10.1		0.500	ug/L	10.0		101	80-120		
Bromobenzene	9.53		0.500	ug/L	10.0		95.3	80-120		
Benzene	10.0		0.500	ug/L	10.0		100	80-120		
1,2-Dibromoethane (EDB)	10.5		0.500	ug/L	10.0		105	70-130		
4-Chlorotoluene	9.82		0.500	ug/L	10.0		98.2	80-120		
Carbon disulfide	11.7		0.500	ug/L	10.0		117	80-120		
2-hexanone	8.78		2.50	ug/L	10.0		87.8	80-120		
2-Chlorotoluene	9.62		0.500	ug/L	10.0		96.2	80-120		
2,2-Dichloropropane	9.30		0.500	ug/L	10.0		93.0	80-120		
1,4-Dichlorobenzene	9.50		0.500	ug/L	10.0		95.0	80-120		
1,3-Dichloropropane	10.3		0.500	ug/L	10.0		103	80-120		
1,3-Dichlorobenzene	10.1		0.500	ug/L	10.0		101	80-120		
1,2-Dichloropropane	9.59		0.500	ug/L	10.0		95.9	80-120		
Acrylonitrile	8.99		0.500	ug/L	10.0		89.9	80-120		
Surrogate: Toluene-d8			*24.0*	*ug/L*	*25.0*		*96.1*	*70-130*		
Surrogate: 4-Bromofluorobenzene			*23.9*	*ug/L*	*25.0*		*95.6*	*70-130*		
Surrogate: 1,2-Dichlorobenzene-d4			*18.7*	*ug/L*	*19.0*		*98.2*	*70-130*		
Matrix Spike (BAG0919-MS1)		**Source: MAG0736-02**			Prepared & Analyzed: 7/29/2020					
1,1,2,2-Tetrachloroethane	8.77		0.500	ug/L	10.0	ND	87.7	70-130		
Dichlorodifluoromethane	8.92		0.500	ug/L	10.0	ND	89.2	70-130		
Chlorobenzene	9.14		0.500	ug/L	10.0	ND	91.4	70-130		
Methyl isobutyl ketone (MIBK)	8.28		2.50	ug/L	10.0	ND	82.8	70-130		
Methyl ethyl ketone (MEK)	9.17		2.50	ug/L	10.0	ND	91.7	70-130		
m+p-Xylene	18.3		0.500	ug/L	20.0	2.54	78.6	70-130		
Isopropylbenzene	8.91		0.500	ug/L	10.0	ND	89.1	70-130		
n-Butylbenzene	8.38		0.500	ug/L	10.0	ND	83.8	70-130		
Ethylbenzene	9.60		0.500	ug/L	10.0	0.920	86.8	70-130		
o-Xylene	9.63		0.500	ug/L	10.0	1.68	79.5	70-130		
Dibromomethane	10.3		0.500	ug/L	10.0	ND	103	70-130		
Dibromochloromethane	8.96		0.500	ug/L	10.0	ND	89.6	70-130		
cis-1,3-Dichloropropene	8.87		0.500	ug/L	10.0	ND	88.7	70-130		
cis-1,2-dichloroethene	10.7		0.500	ug/L	10.0	ND	107	70-130		
Chloroform	9.91		0.500	ug/L	10.0	ND	99.1	70-130		
Chloroethane	11.8		0.500	ug/L	10.0	ND	118	70-130		
Hexachlorobutadiene	11.1		0.500	ug/L	10.0	ND	111	70-130		
1,1,1,2-Tetrachloroethane	8.85		0.500	ug/L	10.0	ND	88.5	70-130		
1,1,1-Trichloroethane	10.2		0.500	ug/L	10.0	ND	102	70-130		
Vinyl Chloride	10.4		0.500	ug/L	10.0	ND	104	70-130		
Trichlorofluoromethane	12.0		0.500	ug/L	10.0	ND	120	70-130		
Trichloroethene	9.59		0.500	ug/L	10.0	ND	95.9	70-130		
methyl-t-butyl ether (MTBE)	8.20		0.500	ug/L	10.0	ND	82.0	70-130		
trans-1,2-Dichloroethene	10.2		0.500	ug/L	10.0	ND	102	70-130		
Naphthalene	11.0		0.500	ug/L	10.0	0.980	100	70-130		
Toluene	12.7		0.500	ug/L	10.0	3.17	95.2	70-130		
Tetrachloroethene	9.43		0.500	ug/L	10.0	ND	94.3	70-130		
tert-Butylbenzene	9.43		0.500	ug/L	10.0	ND	94.3	70-130		
Styrene	3.85		0.500	ug/L	10.0	ND	38.5	70-130		
sec-Butylbenzene	9.24		0.500	ug/L	10.0	ND	92.4	70-130		
p-isopropyltoluene	10.1		0.500	ug/L	10.0	ND	101	70-130		

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0919 - VOC (Continued)										
Matrix Spike (BAG0919-MS1)	**Source: MAG0736-02**				Prepared & Analyzed: 7/29/2020					
trans-1,3-Dichloropropene	8.21		0.500	ug/L	10.0	ND	82.1	70-130		
1,2,3-Trichloropropane	9.72		0.500	ug/L	10.0	ND	97.2	70-130		
1,2-Dichloropropane	8.82		0.500	ug/L	10.0	ND	88.2	70-130		
1,2-Dichloroethane	9.04		0.500	ug/L	10.0	ND	90.4	70-130		
1,2-Dichlorobenzene	9.10		0.500	ug/L	10.0	ND	91.0	70-130		
1,2-Dibromoethane (EDB)	9.10		0.500	ug/L	10.0	ND	91.0	70-130		
1,2-Dibromo-3-chloropropane(DBCP)	9.43		0.500	ug/L	10.0	ND	94.3	70-130		
1,3,5-Trimethylbenzene	5.66		0.500	ug/L	10.0	ND	56.6	70-130		
1,2,4-Trichlorobenzene	10.2		0.500	ug/L	10.0	ND	102	70-130		
1,1-Dichloroethane	10.3		0.500	ug/L	10.0	ND	103	70-130		
1,2,3-Trichlorobenzene	10.0		0.500	ug/L	10.0	ND	100	70-130		
1,1-dichloropropene	8.66		0.500	ug/L	10.0	ND	86.6	70-130		
1,1-Dichloroethene	11.0		0.500	ug/L	10.0	ND	110	70-130		
Carbon Tetrachloride	10.0		0.500	ug/L	10.0	ND	100	70-130		
1,1,2-Trichloroethane	8.96		0.500	ug/L	10.0	ND	89.6	70-130		
n-Propylbenzene	8.93		0.500	ug/L	10.0	ND	89.3	70-130		
1,2,4-Trimethylbenzene	10.2		0.500	ug/L	10.0	1.30	89.3	70-130		
Bromodichloromethane	8.87		0.500	ug/L	10.0	ND	88.7	70-130		
Bromoform	8.37		0.500	ug/L	10.0	ND	83.7	70-130		
Bromochloromethane	11.1		0.500	ug/L	10.0	ND	111	70-130		
Bromobenzene	9.62		0.500	ug/L	10.0	ND	96.2	70-130		
Benzene	9.87		0.500	ug/L	10.0	ND	98.7	70-130		
Acrylonitrile	9.09		0.500	ug/L	10.0	ND	90.9	70-130		
4-Chlorotoluene	9.10		0.500	ug/L	10.0	ND	91.0	70-130		
2-Chlorotoluene	9.75		0.500	ug/L	10.0	ND	97.5	70-130		
2,2-Dichloropropane	9.72		0.500	ug/L	10.0	ND	97.2	70-130		
1,4-Dichlorobenzene	9.08		0.500	ug/L	10.0	ND	90.8	70-130		
1,3-Dichloropropane	8.75		0.500	ug/L	10.0	ND	87.5	70-130		
1,3-Dichlorobenzene	10.1		0.500	ug/L	10.0	ND	101	70-130		
2-hexanone	8.57		2.50	ug/L	10.0	ND	85.7	70-130		
Carbon disulfide	13.2		0.500	ug/L	10.0	ND	132	70-130		
Surrogate: Toluene-d8			*24.2*	*ug/L*	*25.0*		*96.9*	*70-130*		
Surrogate: 4-Bromofluorobenzene			*24.9*	*ug/L*	*25.0*		*99.6*	*70-130*		
Surrogate: 1,2-Dichlorobenzene-d4			*19.2*	*ug/L*	*19.0*		*101*	*70-130*		

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0919 - VOC (Continued)										
Matrix Spike Dup (BAG0919-MSD1)	**Source: MAG0736-02**				Prepared & Analyzed: 7/30/2020					
cis-1,2-dichloroethene	12.6		0.500	ug/L	10.0	ND	126	70-130	16.6	25
methyl-t-butyl ether (MTBE)	7.85		0.500	ug/L	10.0	ND	78.5	70-130	4.36	25
Methyl isobutyl ketone (MIBK)	8.64		2.50	ug/L	10.0	ND	86.4	70-130	4.26	25
Methyl ethyl ketone (MEK)	8.90		2.50	ug/L	10.0	ND	89.0	70-130	2.99	25
m+p-Xylene	17.4		0.500	ug/L	20.0	2.54	74.5	70-130	4.59	25
Isopropylbenzene	9.07		0.500	ug/L	10.0	ND	90.7	70-130	1.78	25
Hexachlorobutadiene	11.2		0.500	ug/L	10.0	ND	112	70-130	1.52	25
Ethylbenzene	9.26		0.500	ug/L	10.0	0.920	83.4	70-130	3.61	25
Dichlorodifluoromethane	9.92		0.500	ug/L	10.0	ND	99.2	70-130	10.6	25
Dibromomethane	11.9		0.500	ug/L	10.0	ND	119	70-130	14.6	25
cis-1,3-Dichloropropene	9.01		0.500	ug/L	10.0	ND	90.1	70-130	1.57	25
Chloroform	12.1		0.500	ug/L	10.0	ND	121	70-130	19.6	25
Naphthalene	12.2		0.500	ug/L	10.0	0.980	112	70-130	10.1	25
Toluene	13.2		0.500	ug/L	10.0	3.17	101	70-130	4.17	25
Chloroethane	12.8		0.500	ug/L	10.0	ND	128	70-130	8.16	25
Dibromochloromethane	8.51		0.500	ug/L	10.0	ND	85.1	70-130	5.15	25
Tetrachloroethene	9.29		0.500	ug/L	10.0	ND	92.9	70-130	1.50	25
1,1,1,2-Tetrachloroethane	8.25		0.500	ug/L	10.0	ND	82.5	70-130	7.02	25
Trichlorofluoromethane	13.2		0.500	ug/L	10.0	ND	132	70-130	9.41	25
Trichloroethene	9.54		0.500	ug/L	10.0	ND	95.4	70-130	0.523	25
trans-1,3-Dichloropropene	8.20		0.500	ug/L	10.0	ND	82.0	70-130	0.122	25
trans-1,2-Dichloroethene	12.1		0.500	ug/L	10.0	ND	121	70-130	16.6	25
tert-Butylbenzene	9.56		0.500	ug/L	10.0	ND	95.6	70-130	1.37	25
Chlorobenzene	9.05		0.500	ug/L	10.0	ND	90.5	70-130	0.990	25
n-Butylbenzene	8.15		0.500	ug/L	10.0	ND	81.5	70-130	2.78	25
Vinyl Chloride	11.7		0.500	ug/L	10.0	ND	117	70-130	11.5	25
Styrene	3.38		0.500	ug/L	10.0	ND	33.8	70-130	13.0	25
sec-Butylbenzene	9.19		0.500	ug/L	10.0	ND	91.9	70-130	0.543	25
p-isopropyltoluene	10.0		0.500	ug/L	10.0	ND	100	70-130	0.797	25
o-Xylene	9.38		0.500	ug/L	10.0	1.68	77.0	70-130	2.63	25
n-Propylbenzene	8.76		0.500	ug/L	10.0	ND	87.6	70-130	1.92	25
1,2,3-Trichloropropane	9.50		0.500	ug/L	10.0	ND	95.0	70-130	2.29	25
1,2-Dichloroethane	10.2		0.500	ug/L	10.0	ND	102	70-130	11.7	25
1,2-Dichlorobenzene	8.76		0.500	ug/L	10.0	ND	87.6	70-130	3.81	25
1,2-Dibromoethane (EDB)	8.82		0.500	ug/L	10.0	ND	88.2	70-130	3.13	25
1,2-Dibromo-3-chloropropane(DBCP)	10.5		0.500	ug/L	10.0	ND	105	70-130	11.0	25
1,1,2,2-Tetrachloroethane	8.86		0.500	ug/L	10.0	ND	88.6	70-130	1.02	25
1,2,4-Trichlorobenzene	11.1		0.500	ug/L	10.0	ND	111	70-130	8.14	25
1,3-Dichlorobenzene	9.97		0.500	ug/L	10.0	ND	99.7	70-130	1.69	25
1,2,3-Trichlorobenzene	10.9		0.500	ug/L	10.0	ND	109	70-130	8.31	25
1,1-dichloropropene	8.81		0.500	ug/L	10.0	ND	88.1	70-130	1.72	25
1,1-Dichloroethene	12.3		0.500	ug/L	10.0	ND	123	70-130	10.8	25
1,1-Dichloroethane	12.0		0.500	ug/L	10.0	ND	120	70-130	15.7	25
1,1,2-Trichloroethane	8.18		0.500	ug/L	10.0	ND	81.8	70-130	9.10	25
1,1,1-Trichloroethane	11.7		0.500	ug/L	10.0	ND	117	70-130	13.6	25
1,2,4-Trimethylbenzene	9.60		0.500	ug/L	10.0	1.30	83.0	70-130	6.35	25
Carbon disulfide	15.5		0.500	ug/L	10.0	ND	155	70-130	16.5	25
Bromoform	8.59		0.500	ug/L	10.0	ND	85.9	70-130	2.59	25
Bromodichloromethane	9.76		0.500	ug/L	10.0	ND	97.6	70-130	9.55	25
Bromochloromethane	12.8		0.500	ug/L	10.0	ND	128	70-130	14.2	25
Bromobenzene	9.89		0.500	ug/L	10.0	ND	98.9	70-130	2.77	25
Benzene	10.2		0.500	ug/L	10.0	ND	102	70-130	3.58	25
1,2-Dichloropropane	8.69		0.500	ug/L	10.0	ND	86.9	70-130	1.48	25

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Quality Control Data
(Continued)

Volatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAG0919 - VOC (Continued)										
Matrix Spike Dup (BAG0919-MSD1)	**Source: MAG0736-02**				Prepared & Analyzed: 7/30/2020					
4-Chlorotoluene	9.16		0.500	ug/L	10.0	ND	91.6	70-130	0.657	25
1,3,5-Trimethylbenzene	5.09		0.500	ug/L	10.0	ND	50.9	70-130	10.6	25
2-hexanone	8.37		2.50	ug/L	10.0	ND	83.7	70-130	2.36	25
2-Chlorotoluene	9.65		0.500	ug/L	10.0	ND	96.5	70-130	1.03	25
2,2-Dichloropropane	11.1		0.500	ug/L	10.0	ND	111	70-130	12.9	25
1,4-Dichlorobenzene	9.00		0.500	ug/L	10.0	ND	90.0	70-130	0.885	25
1,3-Dichloropropane	8.02		0.500	ug/L	10.0	ND	80.2	70-130	8.71	25
Carbon Tetrachloride	10.9		0.500	ug/L	10.0	ND	109	70-130	8.39	25
Acrylonitrile	10.8		0.500	ug/L	10.0	ND	108	70-130	16.9	25
Surrogate: Toluene-d8			*25.9*	*ug/L*	*25.0*		*103*	*70-130*		
Surrogate: 4-Bromofluorobenzene			*25.7*	*ug/L*	*25.0*		*103*	*70-130*		
Surrogate: 1,2-Dichlorobenzene-d4			*19.1*	*ug/L*	*19.0*		*100*	*70-130*		

MAG0736

Due: 08/06/20

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Chain of Custody Record

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Anatek Log-In #

Company Name:	PIONEER Technolologies (PTC)	Project Manager:	Joel Hecker
Address:	5205 Corporate Center Ct SE	Project Name & # :	Sunset Auburn
City: Lacey	State: WA Zip: 98503	Email Address :	Heckerj@uspioneer.com
Phone:	(360) 828-3739	Purchase Order #:	
Fax:		Sampler Name & phone:	Melisa Kegans

Turn Around Time & Reporting

Please refer to our normal turn around times at: http://www.anateklabs.com/services/guidelines/reporting.asp

✓ Normal
__Next Day*
__2nd Day*
__Other*_____

*All rush order requests must be prior approved.

__Phone
__Mail
__Fax
__Email

Provide Sample Description

Low-Flow Groundwater Samples

List Analyses Requested

Lab ID	Sample Identification	Sampling Date/Time	Matrix	# of Containers	Sample Volume	Preservative:	VOCs 8260	TPH-Dx WTPH	As and Pb (field filtered)	VPH (hold all)
	GW-MW-01-07_20 22	07/22/20 14:09	GW	8			x	x	x	
	GW-MW-02-07_20 22	07/22/20 15:02	GW	8			x	x	x	
	GW-MW-03-07_20 21	07/21/20 14:33	GW	8			x	x	x	
	GW-MW-04e-07_20 22	07/22/20 09:08	GW	8			x	x	x	
	GW-MW-05-07_20 22	07/22/20 12:51	GW	8			x	x	x	
	GW-MW-06-07_20 21	07/21/20 13:17	GW	8			x	x	x	
	GW-MW-07-07_20 21	07/21/20 16:19	GW	8			x	x	x	
	GW-MW-08-07_20 22	07/22/20 08:31	GW	8			x	x	x	
	GW-MW-09-07_20 21	07/21/20 15:30	GW	8			x	x	x	
	GW-MW-10-07_20 22	07/22/20 11:40	GW	8			x	x	x	
	GW-MW-11-07_20 22	07/22/20 10:30	GW	8			x	x	x	
	GW-MW-13e-07_20 21	07/21/20 10:53	GW	8			x	x	x	
	GW-MW-[illegible]07_20-01 22	07/22/2020 11:40	GW	8			x	x	x	

Note Special Instructions/Comments

**Also please run Trip Blank (TB-07__20) for VOCs
**Please refer to COC for sample times (not on bottle).

Inspection Checklist

Received Intact?	Y	N
Labels & Chains Agree?	Y	N
Containers Sealed?	Y	N
VOC Head Space?	Y	N

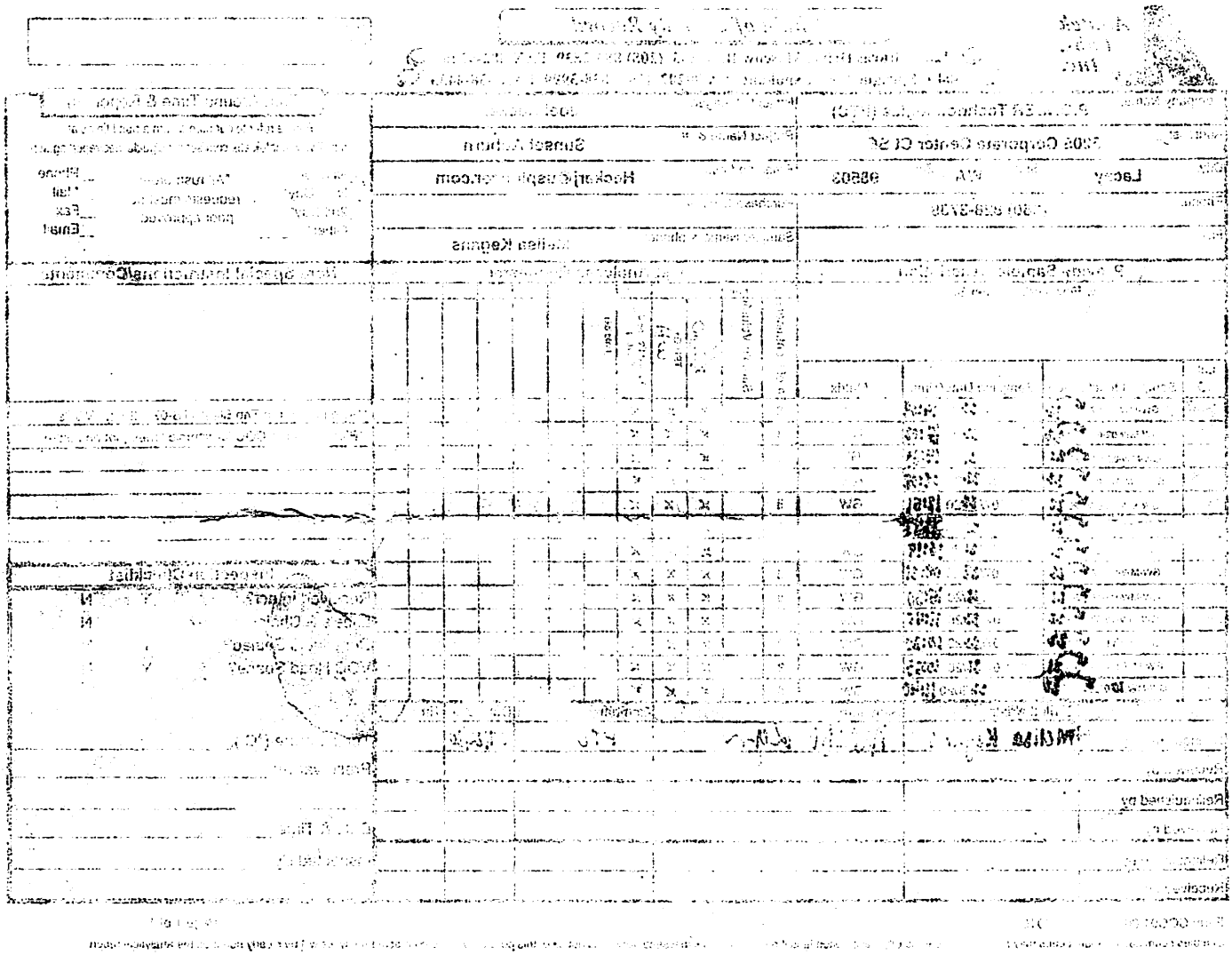
Temperature (°C):_____
Preservative:_____
Date & Time:_____
Inspected By:_____

	Printed Name	Signature	Company	Date	Time
Relinquished by	Melisa Kegans	Melisa Kegans	PTC	07/24/20	
Received by					
Relinquished by					
Received by					
Relinquished by					
Received by					

Form COC01.00 - Eff 1 Mar 2015

Page 1 of 1

Samples submitted to Anatek Labs may be subcontracted to other accredited labs if necessary. This message serves as notice of this possibility. Sub-contracted analyses will be clearly noted on the analytical report.



MAG0736

Due: 08/06/20

Anatek Labs, Inc.

Sample Receipt and Preservation Form

Client Name: Pioneer Technologies (PTC) Project: *(apply Anatek sample label here)*

TAT: (Normal) RUSH: _____ days

Samples Received From: (FedEx) UPS USPS Client Courier Other: _____

Custody Seal on Cooler/Box: Yes (No) Custody Seals Intact: Yes No (N/A)

Number of Coolers/Boxes: 1 Type of Ice: (Ice/Ice Packs) Blue Ice Dry Ice None

Packing Material: (Bubble Wrap) (Bags) Foam/Peanuts None Other: _____

Cooler Temp As Read (°C): 3.9 Cooler Temp Corrected (°C): — Thermometer Used: IR-3

				Comments:
Samples Received Intact?	(Yes)	No	N/A	
Chain of Custody Present?	(Yes)	No	N/A	
Samples Received Within Hold Time?	(Yes)	No	N/A	
Samples Properly Preserved?	(Yes)	No	N/A	
VOC Vials Free of Headspace (<6mm)?	(Yes)	No	N/A	
VOC Trip Blanks Present?	Yes	(No)	N/A	
Labels and Chains Agree?	(Yes)	No	N/A	
Total Number of Sample Bottles Received: 104				

Chain of Custody Fully Completed?	(Yes)	No	N/A	
Correct Containers Received?	(Yes)	No	N/A	
Anatek Bottles Used?	(Yes)	No	Unknown	

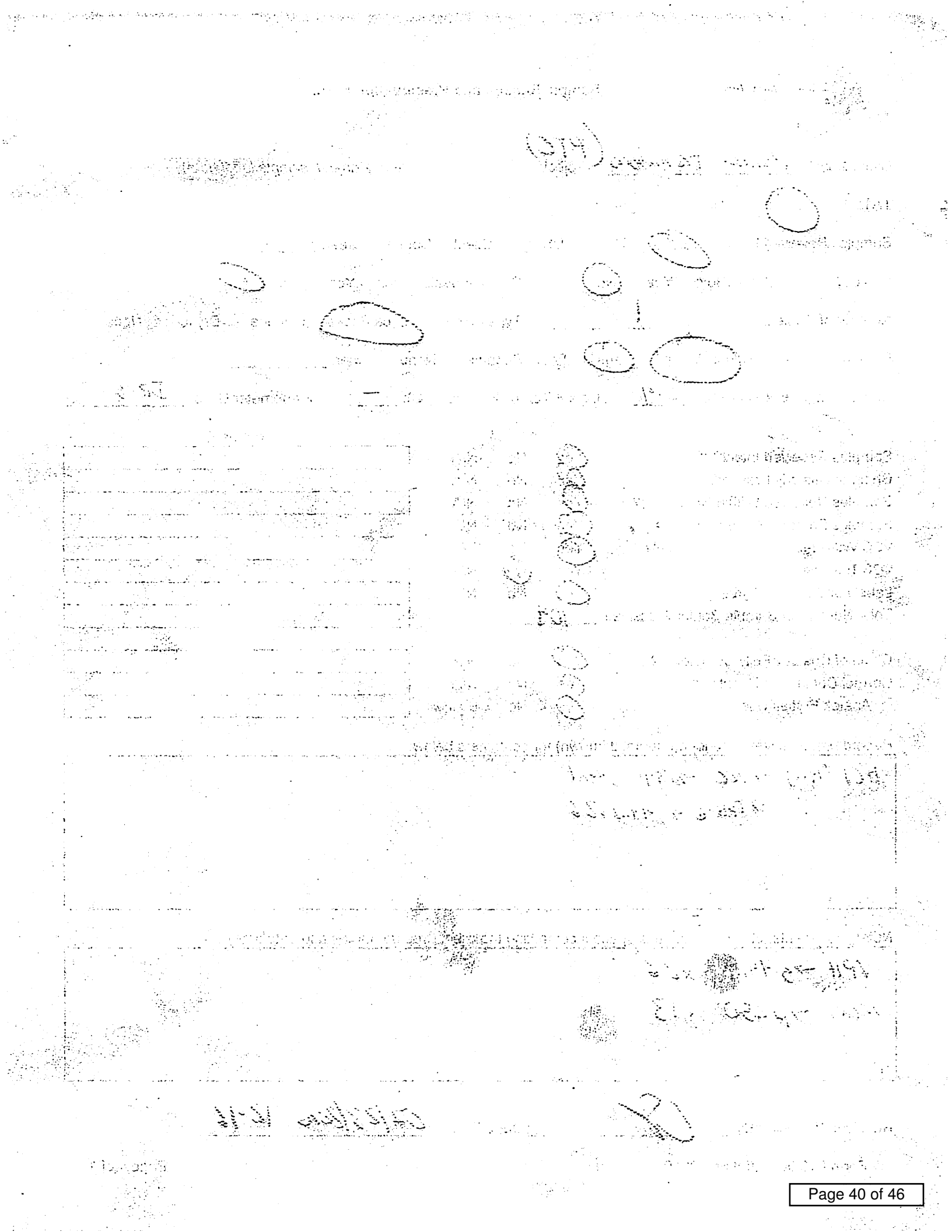
Record preservatives (and lot numbers, if known) for containers below:

HCl (1:1) → VOC → x39 5 44ml
→ TPH-6 → 5 44ml x26

Notes, comments, etc. (also use this space if contacting the client - record names and date/time)

VPH → 5 44ml x26
Metals → P250 x13

Received/Inspected By: CS Date/Time: 07/23/2020 1246



August 27, 2020

Mr. Todd Taruscio
Anatek Labs
1282 Alturas Dr.
Moscow, ID 83843

Dear Mr. Taruscio,

On August 14th, 2 samples were received by our laboratory and assigned our laboratory project number EV20080078. The project was identified as your MAG0736. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental
Environmental www.alsglobal.com
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CERTIFICATE OF ANALYSIS

CLIENT:	Anatek Labs 1282 Alturas Dr. Moscow, ID 83843	DATE:	8/27/2020
		ALS JOB#:	EV20080078
		ALS SAMPLE#:	EV20080078-01
CLIENT CONTACT:	Todd Taruscio	DATE RECEIVED:	08/14/2020
CLIENT PROJECT:	MAG0736	COLLECTION DATE:	7/21/2020 2:33:00 PM
CLIENT SAMPLE ID	MAG0736-03 / GW-MW-03-072120	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics	NWVPH	**1000 HT07**	50	1	UG/L	08/17/2020	KLS
>C6-C8 Aliphatics	NWVPH	**1100 HT07**	50	1	UG/L	08/17/2020	KLS
>C8-C10 Aliphatics	NWVPH	**5900 HT07**	500	10	UG/L	08/26/2020	KLS
>C10-C12 Aliphatics	NWVPH	U, HT07	50	1	UG/L	08/17/2020	KLS
>C8-C10 Aromatics	NWVPH	**4900 HT07**	500	10	UG/L	08/26/2020	KLS
>C10-C12 Aromatics	NWVPH	**6000 HT07**	50	1	UG/L	08/17/2020	KLS
>C12-C13 Aromatics	NWVPH	U, HT07	50	1	UG/L	08/17/2020	KLS
Hexane	NWVPH	**71 HT07**	1.0	1	UG/L	08/17/2020	KLS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	**87.7 HT07**	08/17/2020	KLS
TFT - Aliphatic 10X Dilution	NWVPH	**87.4 HT07**	08/26/2020	KLS
TFT - Aromatic	NWVPH	**99.8 HT07**	08/17/2020	KLS
TFT - Aromatic 10X Dilution	NWVPH	**98.6 HT07**	08/26/2020	KLS
TFT - Hexane	NWVPH	**85.4 HT07**	08/17/2020	KLS

HT07 -Sample holding time expired prior to sample receipt. It was analyzed at the request of the client. Results should be considered estimated.

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Anatek Labs 1282 Alturas Dr. Moscow, ID 83843	DATE:	8/27/2020
		ALS JOB#:	EV20080078
		ALS SAMPLE#:	EV20080078-02
CLIENT CONTACT:	Todd Taruscio	DATE RECEIVED:	08/14/2020
CLIENT PROJECT:	MAG0736	COLLECTION DATE:	7/22/2020 10:30:00 AM
CLIENT SAMPLE ID	MAG0736-11 / GW-MW-11-072220	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics	NWVPH	U, HT07	50	1	UG/L	08/18/2020	KLS
>C6-C8 Aliphatics	NWVPH	U, HT07	50	1	UG/L	08/18/2020	KLS
>C8-C10 Aliphatics	NWVPH	U, HT07	50	1	UG/L	08/18/2020	KLS
>C10-C12 Aliphatics	NWVPH	U, HT07	50	1	UG/L	08/18/2020	KLS
>C8-C10 Aromatics	NWVPH	U, HT07	50	1	UG/L	08/18/2020	KLS
>C10-C12 Aromatics	NWVPH	**120 HT07**	50	1	UG/L	08/18/2020	KLS
>C12-C13 Aromatics	NWVPH	U, HT07	50	1	UG/L	08/18/2020	KLS
Hexane	NWVPH	U, HT07	1.0	1	UG/L	08/18/2020	KLS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	**86.4 HT07**	08/18/2020	KLS
TFT - Aromatic	NWVPH	**93.7 HT07**	08/18/2020	KLS
TFT - Hexane	NWVPH	**80.3 HT07**	08/18/2020	KLS

HT07 -Sample holding time expired prior to sample receipt. It was analyzed at the request of the client. Results should be considered estimated.

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Anatek Labs 1282 Alturas Dr. Moscow, ID 83843	DATE:	8/27/2020
		ALS SDG#:	EV20080078
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Todd Taruscio		
CLIENT PROJECT:	MAG0736		

LABORATORY BLANK RESULTS

MB-081720W - Batch R367589 - Water by NWVPH

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics	NWVPH	U	UG/L	50	08/17/2020	KLS
>C6-C8 Aliphatics	NWVPH	U	UG/L	50	08/17/2020	KLS
>C8-C10 Aliphatics	NWVPH	U	UG/L	50	08/17/2020	KLS
>C10-C12 Aliphatics	NWVPH	U	UG/L	50	08/17/2020	KLS
>C8-C10 Aromatics	NWVPH	U	UG/L	50	08/17/2020	KLS
>C10-C12 Aromatics	NWVPH	U	UG/L	50	08/17/2020	KLS
>C12-C13 Aromatics	NWVPH	U	UG/L	50	08/17/2020	KLS
Hexane	NWVPH	U	UG/L	1.0	08/17/2020	KLS

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Anatek Labs 1282 Alturas Dr. Moscow, ID 83843	DATE:	8/27/2020
		ALS SDG#:	EV20080078
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Todd Taruscio		
CLIENT PROJECT:	MAG0736		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R367589 - Water by NWVPH

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics - BS	NWVPH	**78.4**			70	130	08/17/2020	KLS
C5-C6 Aliphatics - BSD	NWVPH	**80.2**	**2**		70	130	08/17/2020	KLS
>C6-C8 Aliphatics - BS	NWVPH	**81.1**			70	130	08/17/2020	KLS
>C6-C8 Aliphatics - BSD	NWVPH	**79.5**	**2**		70	130	08/17/2020	KLS
>C8-C10 Aliphatics - BS	NWVPH	**81.4**			70	130	08/17/2020	KLS
>C8-C10 Aliphatics - BSD	NWVPH	**78.2**	**4**		70	130	08/17/2020	KLS
>C10-C12 Aliphatics - BS	NWVPH	**81.1**			70	130	08/17/2020	KLS
>C10-C12 Aliphatics - BSD	NWVPH	**80.4**	**1**		70	130	08/17/2020	KLS
>C8-C10 Aromatics - BS	NWVPH	**90.3**			70	130	08/17/2020	KLS
>C8-C10 Aromatics - BSD	NWVPH	**88.8**	**2**		70	130	08/17/2020	KLS
>C10-C12 Aromatics - BS	NWVPH	**95.4**			70	130	08/17/2020	KLS
>C10-C12 Aromatics - BSD	NWVPH	**97.2**	**2**		70	130	08/17/2020	KLS
>C12-C13 Aromatics - BS	NWVPH	**92.0**			70	130	08/17/2020	KLS
>C12-C13 Aromatics - BSD	NWVPH	**96.2**	**4**		70	130	08/17/2020	KLS
Hexane - BS	NWVPH	**77.1**			70	130	08/17/2020	KLS
Hexane - BSD	NWVPH	**75.9**	**2**		70	130	08/17/2020	KLS

APPROVED BY



Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

Environmental www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

EV200800078

Anatek Labs, Inc.

SUBCONTRACT ORDER

1282 Alturas Drive - Moscow, ID 83843 - (208) 8832839 - Fax (208) 8829246 - email moscow@anateklabs.com
504 E Sprague Ste. D - Spokane, WA 99202 - (509) 838-3999 - fax (509) 838-4433 - email spokane@anateklabs.com

Sending Laboratory:

Anatek Labs Inc, Moscow ID
1282 Alturas Drive
Moscow, ID 83843
Phone: 208-883-2839
Fax: 208-882-9246

Project Manager: Todd Taruscio
toddt@anateklabs.com

Subcontracted Laboratory:

ALS Environmental
~~1317 S 13th Ave~~
~~Kelso, WA 98626~~ Everett WA
Phone: (360) 577-7222
Fax: -

Work Order: MAG0736

Analysis	Due	Expires	Comments
Lab Sample ID: MAG0736-03 ***Water*** ***Sampled: 07/21/2020 14:33***			
Client Sample Name: GW-MW-03-072120			
VPH	08/04/2020	08/04/2020 14:33	
Containers Supplied:			
Lab Sample ID: MAG0736-11 ***Water*** ***Sampled: 07/22/2020 10:30***			
Client Sample Name: GW-MW-11-072220			
VPH	08/04/2020	08/05/2020 10:30	
Containers Supplied:			

Released By — 08/13/2020 Date

Received By — ALS 10:05 — 8/14/20 Date

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 10, 2020

Joel Hecker, Project Manager
Pioneer Technologies Corp
5205 Corporate Center Ct, Suite A
Lacey, WA 98503

Dear Mr Hecker:

Included are the amended results from the testing of material submitted on July 16, 2020 from the Sunset Auburn, F&BI 007273 project. Chloroform and naphthalene were reported to the MDL in several samples.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
PTC0805R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

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fbi@isomedia.com
www.friedmanandbruya.com

August 5, 2020

Joel Hecker, Project Manager
Pioneer Technologies Corp
5205 Corporate Center Ct, Suite A
Lacey, WA 98503

Dear Mr Hecker:

Included are the results from the testing of material submitted on July 16, 2020 from the Sunset Auburn, F&BI 007273 project. There are 31 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
PTC0805R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on July 16, 2020 by Friedman & Bruya, Inc. from the Pioneer Technologies Corp Sunset Auburn, F&BI 007273 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Pioneer Technologies Corp
007273 -01	AA-AA-01-071520
007273 -02	IA-IA-01-071520
007273 -03	IA-IA-01-071520-(01)
007273 -04	SG-SG-01-071520-1-3
007273 -05	SG-SG-01-071520-1-3-(01)
007273 -06	IA-IA-02-071520
007273 -07	SG-SG-02-071520
007273 -08	IA-IA-03-071520
007273 -09	SG-SG-03-071520
007273 -10	IA-IA-04-071520
007273 -11	SG-SG-04-071520

Non-petroleum compounds identified in the air phase hydrocarbon (APH) ranges were subtracted per the MA-APH method.

The samples were sent to Fremont Analytical for oxygen, carbon dioxide, and methane analyses. The report is enclosed.

Several APH ranges and TO-15 target analytes exceeded the calibration range of the instrument. The data were flagged accordingly.

The TO-15 calibration standard failed the acceptance criteria for 1,4-dioxane in several samples. The data were flagged accordingly.

All other quality control requirements were acceptable.

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	AA-AA-01-071520	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-01
Date Analyzed:	07/20/20	Data File:	072014.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	111	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	48
APH EC9-12 aliphatics	47
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-IA-01-071520	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-02
Date Analyzed:	07/20/20	Data File:	072015.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	250
APH EC9-12 aliphatics	610
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-IA-01-071520-(01)	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-03
Date Analyzed:	07/20/20	Data File:	072016.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	240
APH EC9-12 aliphatics	650
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SG-SG-01-071520-1-3	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-04 1/41
Date Analyzed:	07/21/20	Data File:	072032.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	99	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	3,600,000 ve
APH EC9-12 aliphatics	5,100
APH EC9-10 aromatics	<1,000

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SG-SG-01-071520-1-3-(01)	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-05 1/38
Date Analyzed:	07/21/20	Data File:	072031.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	79	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	3,200,000 ve
APH EC9-12 aliphatics	4,300
APH EC9-10 aromatics	<950

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-IA-02-071520	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-06
Date Analyzed:	07/20/20	Data File:	072017.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	230
APH EC9-12 aliphatics	1,400 ve
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SG-SG-02-071520	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-07 1/40
Date Analyzed:	07/21/20	Data File:	072030.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	102	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	16,000
APH EC9-12 aliphatics	2,000
APH EC9-10 aromatics	<1,000

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-IA-03-071520	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-08
Date Analyzed:	07/21/20	Data File:	072018.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	96	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	290
APH EC9-12 aliphatics	100
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SG-SG-03-071520	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-09 1/40
Date Analyzed:	07/21/20	Data File:	072029.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	89	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	8,300
APH EC9-12 aliphatics	<1,400
APH EC9-10 aromatics	<1,000

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-IA-04-071520	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-10
Date Analyzed:	07/21/20	Data File:	072019.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	950 ve
APH EC9-12 aliphatics	1,100 ve
APH EC9-10 aromatics	33

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SG-SG-04-071520	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-11 1/42
Date Analyzed:	07/21/20	Data File:	072028.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	101	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	3,200
APH EC9-12 aliphatics	2,100
APH EC9-10 aromatics	<1,000

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Pioneer Technologies Corp
Date Received:	Not Applicable	Project:	Sunset Auburn, F&BI 007273
Date Collected:	Not Applicable	Lab ID:	00-1621 mb
Date Analyzed:	07/20/20	Data File:	072013.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	95	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<30
APH EC9-12 aliphatics	<35
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	AA-AA-01-071520	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-01
Date Analyzed:	07/20/20	Data File:	072014.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	112	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Propene	<1.2	<0.7	1,2-Dichloropropane	<0.23	<0.05
Dichlorodifluoromethane	2.1	0.43	1,4-Dioxane	<0.36 ca	<0.1 ca
Chloromethane	<3.7	<1.8	2,2,4-Trimethylpentane	<4.7	<1
F-114	<0.7	<0.1	Methyl methacrylate	<4.1	<1
Vinyl chloride	<0.26	<0.1	Heptane	<4.1	<1
1,3-Butadiene	<0.022	<0.01	Bromodichloromethane	<0.067	<0.01
Butane	6.8	2.8	Trichloroethene	<0.27	<0.05
Bromomethane	<1.6	<0.4	cis-1,3-Dichloropropene	<0.45	<0.1
Chloroethane	<2.6	<1	4-Methyl-2-pentanone	<4.1	<1
Vinyl bromide	<0.44	<0.1	trans-1,3-Dichloropropene	<0.45	<0.1
Ethanol	11	5.8	Toluene	<19	<5
Acrolein	<2.1	<0.9	1,1,2-Trichloroethane	<0.11	<0.02
Pentane	<3	<1	2-Hexanone	<4.1	<1
Trichlorofluoromethane	<2.2	<0.4	Tetrachloroethene	<6.8	<1
Acetone	17	7.2	Dibromochloromethane	<0.085	<0.01
2-Propanol	<8.6	<3.5	1,2-Dibromoethane (EDB)	<0.077	<0.01
1,1-Dichloroethene	<0.4	<0.1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	0.50	0.12
Methylene chloride	<87	<25	1,1,2,2-Tetrachloroethane	<0.14	<0.02
t-Butyl alcohol (TBA)	<12	<4	Nonane	<5.2	<1
3-Chloropropene	<1.6	<0.5	Isopropylbenzene	<2.5	<0.5
CFC-113	<0.77	<0.1	2-Chlorotoluene	<5.2	<1
Carbon disulfide	<6.2	<2	Propylbenzene	<2.5	<0.5
Methyl t-butyl ether (MTBE)	<1.8	<0.5	4-Ethyltoluene	<2.5	<0.5
Vinyl acetate	<7	<2	m,p-Xylene	1.8	0.41
1,1-Dichloroethane	<0.4	<0.1	o-Xylene	0.64	0.15
cis-1,2-Dichloroethene	<0.4	<0.1	Styrene	<0.85	<0.2
Hexane	<3.5	<1	Bromoform	<2.1	<0.2
Chloroform	0.093	0.019	Benzyl chloride	<0.052	<0.01
Ethyl acetate	<7.2	<2	1,3,5-Trimethylbenzene	<2.5	<0.5
Tetrahydrofuran	<0.29	<0.1	1,2,4-Trimethylbenzene	<2.5	<0.5
2-Butanone (MEK)	<2.9	<1	1,3-Dichlorobenzene	<0.6	<0.1
1,2-Dichloroethane (EDC)	0.057	0.014	1,4-Dichlorobenzene	<0.24	<0.04
1,1,1-Trichloroethane	<0.55	<0.1	1,2-Dichlorobenzene	<0.6	<0.1
Carbon tetrachloride	<0.63	<0.1	1,2,4-Trichlorobenzene	<0.74	<0.1
Benzene	<0.32	<0.1	Naphthalene	0.22	0.042
Cyclohexane	<6.9	<2	Hexachlorobutadiene	<0.21	<0.02

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-IA-01-071520	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-02
Date Analyzed:	07/20/20	Data File:	072015.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	96	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Propene	<1.2	<0.7	1,2-Dichloropropane	<0.23	<0.05
Dichlorodifluoromethane	2.4	0.48	1,4-Dioxane	<0.36	<0.1
Chloromethane	<3.7	<1.8	2,2,4-Trimethylpentane	12	2.5
F-114	<0.7	<0.1	Methyl methacrylate	<4.1	<1
Vinyl chloride	<0.26	<0.1	Heptane	7.0	1.7
1,3-Butadiene	<0.022	<0.01	Bromodichloromethane	<0.067	<0.01
Butane	10	4.4	Trichloroethene	<0.27	<0.05
Bromomethane	<1.6	<0.4	cis-1,3-Dichloropropene	<0.45	<0.1
Chloroethane	<2.6	<1	4-Methyl-2-pentanone	<4.1	<1
Vinyl bromide	<0.44	<0.1	trans-1,3-Dichloropropene	<0.45	<0.1
Ethanol	180 ve	93 ve	Toluene	<19	<5
Acrolein	<2.1	<0.9	1,1,2-Trichloroethane	<0.11	<0.02
Pentane	9.8	3.3	2-Hexanone	<4.1	<1
Trichlorofluoromethane	<2.2	<0.4	Tetrachloroethene	<6.8	<1
Acetone	99 ve	41 ve	Dibromochloromethane	<0.085	<0.01
2-Propanol	110 ve	44 ve	1,2-Dibromoethane (EDB)	<0.077	<0.01
1,1-Dichloroethene	<0.4	<0.1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	1.1	0.25
Methylene chloride	<87	<25	1,1,2,2-Tetrachloroethane	<0.14	<0.02
t-Butyl alcohol (TBA)	<12	<4	Nonane	<5.2	<1
3-Chloropropene	<1.6	<0.5	Isopropylbenzene	<2.5	<0.5
CFC-113	<0.77	<0.1	2-Chlorotoluene	<5.2	<1
Carbon disulfide	<6.2	<2	Propylbenzene	<2.5	<0.5
Methyl t-butyl ether (MTBE)	<1.8	<0.5	4-Ethyltoluene	<2.5	<0.5
Vinyl acetate	<7	<2	m,p-Xylene	4.6	1.1
1,1-Dichloroethane	<0.4	<0.1	o-Xylene	1.5	0.35
cis-1,2-Dichloroethene	<0.4	<0.1	Styrene	<0.85	<0.2
Hexane	13	3.7	Bromoform	<2.1	<0.2
Chloroform	0.17	0.035	Benzyl chloride	<0.052	<0.01
Ethyl acetate	<7.2	<2	1,3,5-Trimethylbenzene	<2.5	<0.5
Tetrahydrofuran	<0.29	<0.1	1,2,4-Trimethylbenzene	<2.5	<0.5
2-Butanone (MEK)	3.0	1.0	1,3-Dichlorobenzene	<0.6	<0.1
1,2-Dichloroethane (EDC)	0.057	0.014	1,4-Dichlorobenzene	<0.24	<0.04
1,1,1-Trichloroethane	<0.55	<0.1	1,2-Dichlorobenzene	<0.6	<0.1
Carbon tetrachloride	<0.63	<0.1	1,2,4-Trichlorobenzene	<0.74	<0.1
Benzene	0.70	0.22	Naphthalene	0.61	0.12
Cyclohexane	<6.9	<2	Hexachlorobutadiene	<0.21	<0.02

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-IA-01-071520-(01)	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-03
Date Analyzed:	07/20/20	Data File:	072016.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Propene	<1.2	<0.7	1,2-Dichloropropane	<0.23	<0.05
Dichlorodifluoromethane	2.3	0.46	1,4-Dioxane	<0.36	<0.1
Chloromethane	<3.7	<1.8	2,2,4-Trimethylpentane	11	2.4
F-114	<0.7	<0.1	Methyl methacrylate	<4.1	<1
Vinyl chloride	<0.26	<0.1	Heptane	6.8	1.6
1,3-Butadiene	<0.022	<0.01	Bromodichloromethane	<0.067	<0.01
Butane	11	4.5	Trichloroethene	<0.27	<0.05
Bromomethane	<1.6	<0.4	cis-1,3-Dichloropropene	<0.45	<0.1
Chloroethane	<2.6	<1	4-Methyl-2-pentanone	<4.1	<1
Vinyl bromide	<0.44	<0.1	trans-1,3-Dichloropropene	<0.45	<0.1
Ethanol	170 ve	89 ve	Toluene	<19	<5
Acrolein	<2.1	<0.9	1,1,2-Trichloroethane	<0.11	<0.02
Pentane	11	3.7	2-Hexanone	<4.1	<1
Trichlorofluoromethane	<2.2	<0.4	Tetrachloroethene	<6.8	<1
Acetone	91 ve	38 ve	Dibromochloromethane	<0.085	<0.01
2-Propanol	100 ve	42 ve	1,2-Dibromoethane (EDB)	<0.077	<0.01
1,1-Dichloroethene	<0.4	<0.1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	1.1	0.24
Methylene chloride	<87	<25	1,1,2,2-Tetrachloroethane	<0.14	<0.02
t-Butyl alcohol (TBA)	<12	<4	Nonane	<5.2	<1
3-Chloropropene	<1.6	<0.5	Isopropylbenzene	<2.5	<0.5
CFC-113	<0.77	<0.1	2-Chlorotoluene	<5.2	<1
Carbon disulfide	<6.2	<2	Propylbenzene	<2.5	<0.5
Methyl t-butyl ether (MTBE)	<1.8	<0.5	4-Ethyltoluene	<2.5	<0.5
Vinyl acetate	<7	<2	m,p-Xylene	4.3	1.0
1,1-Dichloroethane	<0.4	<0.1	o-Xylene	1.5	0.35
cis-1,2-Dichloroethene	<0.4	<0.1	Styrene	<0.85	<0.2
Hexane	14	3.9	Bromoform	<2.1	<0.2
Chloroform	0.17	0.034	Benzyl chloride	<0.052	<0.01
Ethyl acetate	<7.2	<2	1,3,5-Trimethylbenzene	<2.5	<0.5
Tetrahydrofuran	<0.29	<0.1	1,2,4-Trimethylbenzene	<2.5	<0.5
2-Butanone (MEK)	<2.9	<1	1,3-Dichlorobenzene	<0.6	<0.1
1,2-Dichloroethane (EDC)	0.053	0.013	1,4-Dichlorobenzene	<0.24	<0.04
1,1,1-Trichloroethane	<0.55	<0.1	1,2-Dichlorobenzene	<0.6	<0.1
Carbon tetrachloride	<0.63	<0.1	1,2,4-Trichlorobenzene	<0.74	<0.1
Benzene	0.71	0.22	Naphthalene	0.56	0.11
Cyclohexane	<6.9	<2	Hexachlorobutadiene	<0.21	<0.02

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SG-SG-01-071520-1-3	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-04 1/41
Date Analyzed:	07/21/20	Data File:	072032.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	100	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Propene	1,900 ve	1,100 ve	1,2-Dichloropropane	<9.5	<2
Dichlorodifluoromethane	<20	<4.1	1,4-Dioxane	<15	<4.1
Chloromethane	<150	<74	2,2,4-Trimethylpentane	340,000 ve	72,000 ve
F-114	<29	<4.1	Methyl methacrylate	<170	<41
Vinyl chloride	<10	<4.1	Heptane	93,000 ve	23,000 ve
1,3-Butadiene	<0.91	<0.41	Bromodichloromethane	<2.7	<0.41
Butane	290,000 ve	120,000 ve	Trichloroethene	<11	<2
Bromomethane	<64	<16	cis-1,3-Dichloropropene	<19	<4.1
Chloroethane	<110	<41	4-Methyl-2-pentanone	<170	<41
Vinyl bromide	<18	<4.1	trans-1,3-Dichloropropene	<19	<4.1
Ethanol	520	280	Toluene	<770	<200
Acrolein	<85	<37	1,1,2-Trichloroethane	<4.5	<0.82
Pentane	1,900,000 ve	630,000 ve	2-Hexanone	<170	<41
Trichlorofluoromethane	<92	<16	Tetrachloroethene	<280	<41
Acetone	<190	<82	Dibromochloromethane	<3.5	<0.41
2-Propanol	<350	<140	1,2-Dibromoethane (EDB)	<3.2	<0.41
1,1-Dichloroethene	<16	<4.1	Chlorobenzene	<19	<4.1
trans-1,2-Dichloroethene	<16	<4.1	Ethylbenzene	<18	<4.1
Methylene chloride	<3,600	<1,000	1,1,2,2-Tetrachloroethane	<5.6	<0.82
t-Butyl alcohol (TBA)	<500	<160	Nonane	<220	<41
3-Chloropropene	<64	<20	Isopropylbenzene	<100	<20
CFC-113	<31	<4.1	2-Chlorotoluene	<210	<41
Carbon disulfide	<260	<82	Propylbenzene	<100	<20
Methyl t-butyl ether (MTBE)	<74	<20	4-Ethyltoluene	<100	<20
Vinyl acetate	<290	<82	m,p-Xylene	<36	<8.2
1,1-Dichloroethane	<17	<4.1	o-Xylene	<18	<4.1
cis-1,2-Dichloroethene	<16	<4.1	Styrene	<35	<8.2
Hexane	2,400,000 ve	680,000 ve	Bromoform	<85	<8.2
Chloroform	<0.62 j	<0.12 j	Benzyl chloride	<2.1	<0.41
Ethyl acetate	<300	<82	1,3,5-Trimethylbenzene	<100	<20
Tetrahydrofuran	<12	<4.1	1,2,4-Trimethylbenzene	<100	<20
2-Butanone (MEK)	<120	<41	1,3-Dichlorobenzene	<25	<4.1
1,2-Dichloroethane (EDC)	<1.7	<0.41	1,4-Dichlorobenzene	<9.9	<1.6
1,1,1-Trichloroethane	<22	<4.1	1,2-Dichlorobenzene	<25	<4.1
Carbon tetrachloride	<26	<4.1	1,2,4-Trichlorobenzene	<30	<4.1
Benzene	4,700 ve	1,500 ve	Naphthalene	<2.3 j	<0.45 j
Cyclohexane	310,000 ve	90,000 ve	Hexachlorobutadiene	<8.7	<0.82

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SG-SG-01-071520-1-3-(01)	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-05 1/38
Date Analyzed:	07/21/20	Data File:	072031.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Propene	1,900 ve	1,100 ve	1,2-Dichloropropane	<8.8	<1.9
Dichlorodifluoromethane	<19	<3.8	1,4-Dioxane	<14	<3.8
Chloromethane	<140	<68	2,2,4-Trimethylpentane	320,000 ve	68,000 ve
F-114	<27	<3.8	Methyl methacrylate	<160	<38
Vinyl chloride	<9.7	<3.8	Heptane	84,000 ve	21,000 ve
1,3-Butadiene	<0.84	<0.38	Bromodichloromethane	<2.5	<0.38
Butane	290,000 ve	120,000 ve	Trichloroethene	<10	<1.9
Bromomethane	<59	<15	cis-1,3-Dichloropropene	<17	<3.8
Chloroethane	<100	<38	4-Methyl-2-pentanone	<160	<38
Vinyl bromide	<17	<3.8	trans-1,3-Dichloropropene	<17	<3.8
Ethanol	500	270	Toluene	<720	<190
Acrolein	<78	<34	1,1,2-Trichloroethane	<4.1	<0.76
Pentane	1,800,000 ve	620,000 ve	2-Hexanone	<160	<38
Trichlorofluoromethane	<85	<15	Tetrachloroethene	<260	<38
Acetone	<180	<76	Dibromochloromethane	<3.2	<0.38
2-Propanol	<330	<130	1,2-Dibromoethane (EDB)	<2.9	<0.38
1,1-Dichloroethene	<15	<3.8	Chlorobenzene	<17	<3.8
trans-1,2-Dichloroethene	<15	<3.8	Ethylbenzene	<17	<3.8
Methylene chloride	<3,300	<950	1,1,2,2-Tetrachloroethane	<5.2	<0.76
t-Butyl alcohol (TBA)	<460	<150	Nonane	<200	<38
3-Chloropropene	<59	<19	Isopropylbenzene	<93	<19
CFC-113	<29	<3.8	2-Chlorotoluene	<200	<38
Carbon disulfide	<240	<76	Propylbenzene	<93	<19
Methyl t-butyl ether (MTBE)	<69	<19	4-Ethyltoluene	<93	<19
Vinyl acetate	<270	<76	m,p-Xylene	<33	<7.6
1,1-Dichloroethane	<15	<3.8	o-Xylene	<17	<3.8
cis-1,2-Dichloroethene	<15	<3.8	Styrene	<32	<7.6
Hexane	2,100,000 ve	600,000 ve	Bromoform	<79	<7.6
Chloroform	<0.57 j	<0.11 j	Benzyl chloride	<2	<0.38
Ethyl acetate	<270	<76	1,3,5-Trimethylbenzene	<93	<19
Tetrahydrofuran	<11	<3.8	1,2,4-Trimethylbenzene	<93	<19
2-Butanone (MEK)	<110	<38	1,3-Dichlorobenzene	<23	<3.8
1,2-Dichloroethane (EDC)	<1.5	<0.38	1,4-Dichlorobenzene	<9.1	<1.5
1,1,1-Trichloroethane	<21	<3.8	1,2-Dichlorobenzene	<23	<3.8
Carbon tetrachloride	<24	<3.8	1,2,4-Trichlorobenzene	<28	<3.8
Benzene	4,500 ve	1,400 ve	Naphthalene	<2.2 j	<0.42 j
Cyclohexane	300,000 ve	88,000 ve	Hexachlorobutadiene	<8.1	<0.76

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-IA-02-071520	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-06
Date Analyzed:	07/20/20	Data File:	072017.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	95	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Propene	<1.2	<0.7	1,2-Dichloropropane	<0.23	<0.05
Dichlorodifluoromethane	2.5	0.50	1,4-Dioxane	<0.36	<0.1
Chloromethane	<3.7	<1.8	2,2,4-Trimethylpentane	9.0	1.9
F-114	<0.7	<0.1	Methyl methacrylate	<4.1	<1
Vinyl chloride	<0.26	<0.1	Heptane	6.3	1.5
1,3-Butadiene	<0.022	<0.01	Bromodichloromethane	<0.067	<0.01
Butane	11	4.6	Trichloroethene	<0.27	<0.05
Bromomethane	<1.6	<0.4	cis-1,3-Dichloropropene	<0.45	<0.1
Chloroethane	<2.6	<1	4-Methyl-2-pentanone	<4.1	<1
Vinyl bromide	<0.44	<0.1	trans-1,3-Dichloropropene	<0.45	<0.1
Ethanol	160 ve	85 ve	Toluene	<19	<5
Acrolein	<2.1	<0.9	1,1,2-Trichloroethane	<0.11	<0.02
Pentane	8.9	3.0	2-Hexanone	<4.1	<1
Trichlorofluoromethane	<2.2	<0.4	Tetrachloroethene	<6.8	<1
Acetone	93 ve	39 ve	Dibromochloromethane	<0.085	<0.01
2-Propanol	96 ve	39 ve	1,2-Dibromoethane (EDB)	<0.077	<0.01
1,1-Dichloroethene	<0.4	<0.1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	1.0	0.24
Methylene chloride	<87	<25	1,1,2,2-Tetrachloroethane	<0.14	<0.02
t-Butyl alcohol (TBA)	<12	<4	Nonane	<5.2	<1
3-Chloropropene	<1.6	<0.5	Isopropylbenzene	<2.5	<0.5
CFC-113	<0.77	<0.1	2-Chlorotoluene	<5.2	<1
Carbon disulfide	<6.2	<2	Propylbenzene	<2.5	<0.5
Methyl t-butyl ether (MTBE)	<1.8	<0.5	4-Ethyltoluene	<2.5	<0.5
Vinyl acetate	<7	<2	m,p-Xylene	4.2	0.97
1,1-Dichloroethane	<0.4	<0.1	o-Xylene	1.4	0.33
cis-1,2-Dichloroethene	<0.4	<0.1	Styrene	<0.85	<0.2
Hexane	11	3.1	Bromoform	<2.1	<0.2
Chloroform	0.19	0.039	Benzyl chloride	<0.052	<0.01
Ethyl acetate	<7.2	<2	1,3,5-Trimethylbenzene	<2.5	<0.5
Tetrahydrofuran	<0.29	<0.1	1,2,4-Trimethylbenzene	<2.5	<0.5
2-Butanone (MEK)	3.1	1.0	1,3-Dichlorobenzene	<0.6	<0.1
1,2-Dichloroethane (EDC)	0.053	0.013	1,4-Dichlorobenzene	<0.24	<0.04
1,1,1-Trichloroethane	<0.55	<0.1	1,2-Dichlorobenzene	<0.6	<0.1
Carbon tetrachloride	<0.63	<0.1	1,2,4-Trichlorobenzene	<0.74	<0.1
Benzene	0.73	0.23	Naphthalene	0.51	0.097
Cyclohexane	<6.9	<2	Hexachlorobutadiene	<0.21	<0.02

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SG-SG-02-071520	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-07 1/40
Date Analyzed:	07/21/20	Data File:	072030.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	103	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Propene	51	30	1,2-Dichloropropane	<9.2	<2
Dichlorodifluoromethane	<20	<4	1,4-Dioxane	<14 ca	<4 ca
Chloromethane	<150	<72	2,2,4-Trimethylpentane	220	47
F-114	<28	<4	Methyl methacrylate	<160	<40
Vinyl chloride	<10	<4	Heptane	<160	<40
1,3-Butadiene	<0.88	<0.4	Bromodichloromethane	<2.7	<0.4
Butane	1,300	540	Trichloroethene	<11	<2
Bromomethane	<62	<16	cis-1,3-Dichloropropene	<18	<4
Chloroethane	<110	<40	4-Methyl-2-pentanone	<160	<40
Vinyl bromide	<17	<4	trans-1,3-Dichloropropene	<18	<4
Ethanol	600	320	Toluene	<750	<200
Acrolein	<83	<36	1,1,2-Trichloroethane	<4.4	<0.8
Pentane	2,000	660	2-Hexanone	<160	<40
Trichlorofluoromethane	<90	<16	Tetrachloroethene	<270	<40
Acetone	<190	<80	Dibromochloromethane	<3.4	<0.4
2-Propanol	<340	<140	1,2-Dibromoethane (EDB)	<3.1	<0.4
1,1-Dichloroethene	<16	<4	Chlorobenzene	<18	<4
trans-1,2-Dichloroethene	<16	<4	Ethylbenzene	<17	<4
Methylene chloride	<3,500	<1,000	1,1,2,2-Tetrachloroethane	<5.5	<0.8
t-Butyl alcohol (TBA)	<490	<160	Nonane	<210	<40
3-Chloropropene	<63	<20	Isopropylbenzene	<98	<20
CFC-113	<31	<4	2-Chlorotoluene	<210	<40
Carbon disulfide	<250	<80	Propylbenzene	<98	<20
Methyl t-butyl ether (MTBE)	<72	<20	4-Ethyltoluene	<98	<20
Vinyl acetate	<280	<80	m,p-Xylene	<35	<8
1,1-Dichloroethane	<16	<4	o-Xylene	<17	<4
cis-1,2-Dichloroethene	<16	<4	Styrene	<34	<8
Hexane	500	140	Bromoform	<83	<8
Chloroform	<0.6 j	<0.12 j	Benzyl chloride	<2.1	<0.4
Ethyl acetate	<290	<80	1,3,5-Trimethylbenzene	<98	<20
Tetrahydrofuran	<12	<4	1,2,4-Trimethylbenzene	<98	<20
2-Butanone (MEK)	<120	<40	1,3-Dichlorobenzene	<24	<4
1,2-Dichloroethane (EDC)	<1.6	<0.4	1,4-Dichlorobenzene	<9.6	<1.6
1,1,1-Trichloroethane	<22	<4	1,2-Dichlorobenzene	<24	<4
Carbon tetrachloride	<25	<4	1,2,4-Trichlorobenzene	<30	<4
Benzene	<13	<4	Naphthalene	<2.2 j	<0.44 j
Cyclohexane	<280	<80	Hexachlorobutadiene	<8.5	<0.8

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-IA-03-071520	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-08
Date Analyzed:	07/21/20	Data File:	072018.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Propene	<1.2	<0.7	1,2-Dichloropropane	<0.23	<0.05
Dichlorodifluoromethane	2.6	0.53	1,4-Dioxane	<0.36	<0.1
Chloromethane	<3.7	<1.8	2,2,4-Trimethylpentane	<4.7	<1
F-114	<0.7	<0.1	Methyl methacrylate	<4.1	<1
Vinyl chloride	<0.26	<0.1	Heptane	8.1	2.0
1,3-Butadiene	<0.022	<0.01	Bromodichloromethane	<0.067	<0.01
Butane	11	4.6	Trichloroethene	<0.27	<0.05
Bromomethane	<1.6	<0.4	cis-1,3-Dichloropropene	<0.45	<0.1
Chloroethane	<2.6	<1	4-Methyl-2-pentanone	<4.1	<1
Vinyl bromide	<0.44	<0.1	trans-1,3-Dichloropropene	<0.45	<0.1
Ethanol	320 ve	170 ve	Toluene	<19	<5
Acrolein	<2.1	<0.9	1,1,2-Trichloroethane	<0.11	<0.02
Pentane	<3	<1	2-Hexanone	<4.1	<1
Trichlorofluoromethane	<2.2	<0.4	Tetrachloroethene	<6.8	<1
Acetone	170 ve	71 ve	Dibromochloromethane	<0.085	<0.01
2-Propanol	1,300 ve	540 ve	1,2-Dibromoethane (EDB)	<0.077	<0.01
1,1-Dichloroethene	<0.4	<0.1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	1.5	0.33
Methylene chloride	<87	<25	1,1,2,2-Tetrachloroethane	<0.14	<0.02
t-Butyl alcohol (TBA)	<12	<4	Nonane	<5.2	<1
3-Chloropropene	<1.6	<0.5	Isopropylbenzene	<2.5	<0.5
CFC-113	<0.77	<0.1	2-Chlorotoluene	<5.2	<1
Carbon disulfide	<6.2	<2	Propylbenzene	<2.5	<0.5
Methyl t-butyl ether (MTBE)	<1.8	<0.5	4-Ethyltoluene	<2.5	<0.5
Vinyl acetate	<7	<2	m,p-Xylene	6.0	1.4
1,1-Dichloroethane	<0.4	<0.1	o-Xylene	2.1	0.48
cis-1,2-Dichloroethene	<0.4	<0.1	Styrene	<0.85	<0.2
Hexane	<3.5	<1	Bromoform	<2.1	<0.2
Chloroform	0.24	0.050	Benzyl chloride	<0.052	<0.01
Ethyl acetate	<7.2	<2	1,3,5-Trimethylbenzene	<2.5	<0.5
Tetrahydrofuran	<0.29	<0.1	1,2,4-Trimethylbenzene	<2.5	<0.5
2-Butanone (MEK)	<2.9	<1	1,3-Dichlorobenzene	<0.6	<0.1
1,2-Dichloroethane (EDC)	0.089	0.022	1,4-Dichlorobenzene	<0.24	<0.04
1,1,1-Trichloroethane	<0.55	<0.1	1,2-Dichlorobenzene	<0.6	<0.1
Carbon tetrachloride	<0.63	<0.1	1,2,4-Trichlorobenzene	<0.74	<0.1
Benzene	0.60	0.19	Naphthalene	0.40	0.077
Cyclohexane	<6.9	<2	Hexachlorobutadiene	<0.21	<0.02

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SG-SG-03-071520	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-09 1/40
Date Analyzed:	07/21/20	Data File:	072029.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Propene	150	88	1,2-Dichloropropane	<9.2	<2
Dichlorodifluoromethane	<20	<4	1,4-Dioxane	<14	<4
Chloromethane	<150	<72	2,2,4-Trimethylpentane	1,100	240
F-114	<28	<4	Methyl methacrylate	<160	<40
Vinyl chloride	<10	<4	Heptane	<160	<40
1,3-Butadiene	<0.88	<0.4	Bromodichloromethane	<2.7	<0.4
Butane	150	63	Trichloroethene	<11	<2
Bromomethane	<62	<16	cis-1,3-Dichloropropene	<18	<4
Chloroethane	<110	<40	4-Methyl-2-pentanone	<160	<40
Vinyl bromide	<17	<4	trans-1,3-Dichloropropene	<18	<4
Ethanol	640	340	Toluene	<750	<200
Acrolein	<83	<36	1,1,2-Trichloroethane	<4.4	<0.8
Pentane	<120	<40	2-Hexanone	<160	<40
Trichlorofluoromethane	<90	<16	Tetrachloroethene	<270	<40
Acetone	<190	<80	Dibromochloromethane	<3.4	<0.4
2-Propanol	<340	<140	1,2-Dibromoethane (EDB)	<3.1	<0.4
1,1-Dichloroethene	<16	<4	Chlorobenzene	<18	<4
trans-1,2-Dichloroethene	<16	<4	Ethylbenzene	<17	<4
Methylene chloride	<3,500	<1,000	1,1,2,2-Tetrachloroethane	<5.5	<0.8
t-Butyl alcohol (TBA)	<490	<160	Nonane	<210	<40
3-Chloropropene	<63	<20	Isopropylbenzene	<98	<20
CFC-113	<31	<4	2-Chlorotoluene	<210	<40
Carbon disulfide	<250	<80	Propylbenzene	<98	<20
Methyl t-butyl ether (MTBE)	<72	<20	4-Ethyltoluene	<98	<20
Vinyl acetate	<280	<80	m,p-Xylene	<35	<8
1,1-Dichloroethane	<16	<4	o-Xylene	<17	<4
cis-1,2-Dichloroethene	<16	<4	Styrene	<34	<8
Hexane	<140	<40	Bromoform	<83	<8
Chloroform	<0.6 j	<0.12 j	Benzyl chloride	<2.1	<0.4
Ethyl acetate	<290	<80	1,3,5-Trimethylbenzene	<98	<20
Tetrahydrofuran	<12	<4	1,2,4-Trimethylbenzene	<98	<20
2-Butanone (MEK)	<120	<40	1,3-Dichlorobenzene	<24	<4
1,2-Dichloroethane (EDC)	<1.6	<0.4	1,4-Dichlorobenzene	<9.6	<1.6
1,1,1-Trichloroethane	<22	<4	1,2-Dichlorobenzene	<24	<4
Carbon tetrachloride	<25	<4	1,2,4-Trichlorobenzene	<30	<4
Benzene	13	4.0	Naphthalene	<2.2 j	<0.44 j
Cyclohexane	<280	<80	Hexachlorobutadiene	<8.5	<0.8

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-IA-04-071520	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-10
Date Analyzed:	07/21/20	Data File:	072019.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Propene	<1.2	<0.7	1,2-Dichloropropane	<0.23	<0.05
Dichlorodifluoromethane	2.4	0.49	1,4-Dioxane	<0.36	<0.1
Chloromethane	<3.7	<1.8	2,2,4-Trimethylpentane	<4.7	<1
F-114	<0.7	<0.1	Methyl methacrylate	<4.1	<1
Vinyl chloride	<0.26	<0.1	Heptane	63	15
1,3-Butadiene	<0.022	<0.01	Bromodichloromethane	<0.067	<0.01
Butane	40	17	Trichloroethene	<0.27	<0.05
Bromomethane	<1.6	<0.4	cis-1,3-Dichloropropene	<0.45	<0.1
Chloroethane	<2.6	<1	4-Methyl-2-pentanone	<4.1	<1
Vinyl bromide	<0.44	<0.1	trans-1,3-Dichloropropene	<0.45	<0.1
Ethanol	46	25	Toluene	<19	<5
Acrolein	<2.1	<0.9	1,1,2-Trichloroethane	<0.11	<0.02
Pentane	23	7.9	2-Hexanone	<4.1	<1
Trichlorofluoromethane	<2.2	<0.4	Tetrachloroethene	<6.8	<1
Acetone	1,800 ve	750 ve	Dibromochloromethane	<0.085	<0.01
2-Propanol	24	9.6	1,2-Dibromoethane (EDB)	<0.077	<0.01
1,1-Dichloroethene	<0.4	<0.1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	8.9	2.0
Methylene chloride	<87	<25	1,1,2,2-Tetrachloroethane	<0.14	<0.02
t-Butyl alcohol (TBA)	<12	<4	Nonane	51	9.8
3-Chloropropene	<1.6	<0.5	Isopropylbenzene	<2.5	<0.5
CFC-113	<0.77	<0.1	2-Chlorotoluene	<5.2	<1
Carbon disulfide	<6.2	<2	Propylbenzene	<2.5	<0.5
Methyl t-butyl ether (MTBE)	<1.8	<0.5	4-Ethyltoluene	2.7	0.54
Vinyl acetate	<7	<2	m,p-Xylene	39	8.9
1,1-Dichloroethane	<0.4	<0.1	o-Xylene	14	3.2
cis-1,2-Dichloroethene	<0.4	<0.1	Styrene	<0.85	<0.2
Hexane	9.9	2.8	Bromoform	<2.1	<0.2
Chloroform	0.093	0.019	Benzyl chloride	<0.052	<0.01
Ethyl acetate	<7.2	<2	1,3,5-Trimethylbenzene	2.5	0.51
Tetrahydrofuran	<0.29	<0.1	1,2,4-Trimethylbenzene	9.2	1.9
2-Butanone (MEK)	7.3	2.5	1,3-Dichlorobenzene	<0.6	<0.1
1,2-Dichloroethane (EDC)	0.057	0.014	1,4-Dichlorobenzene	<0.24	<0.04
1,1,1-Trichloroethane	<0.55	<0.1	1,2-Dichlorobenzene	<0.6	<0.1
Carbon tetrachloride	<0.63	<0.1	1,2,4-Trichlorobenzene	<0.74	<0.1
Benzene	1.3	0.41	Naphthalene	0.64	0.12
Cyclohexane	120 ve	34 ve	Hexachlorobutadiene	<0.21	<0.02

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SG-SG-04-071520	Client:	Pioneer Technologies Corp
Date Received:	07/16/20	Project:	Sunset Auburn, F&BI 007273
Date Collected:	07/15/20	Lab ID:	007273-11 1/42
Date Analyzed:	07/21/20	Data File:	072028.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	102	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Propene	5,100 ve	3,000 ve	1,2-Dichloropropane	<9.7	<2.1
Dichlorodifluoromethane	<21	<4.2	1,4-Dioxane	<15 ca	<4.2 ca
Chloromethane	<160	<76	2,2,4-Trimethylpentane	<200	<42
F-114	<29	<4.2	Methyl methacrylate	<170	<42
Vinyl chloride	<11	<4.2	Heptane	<170	<42
1,3-Butadiene	<0.93	<0.42	Bromodichloromethane	<2.8	<0.42
Butane	1,700	720	Trichloroethene	<11	<2.1
Bromomethane	<65	<17	cis-1,3-Dichloropropene	<19	<4.2
Chloroethane	<110	<42	4-Methyl-2-pentanone	<170	<42
Vinyl bromide	<18	<4.2	trans-1,3-Dichloropropene	<19	<4.2
Ethanol	730	390	Toluene	<790	<210
Acrolein	<87	<38	1,1,2-Trichloroethane	<4.6	<0.84
Pentane	460	160	2-Hexanone	<170	<42
Trichlorofluoromethane	<94	<17	Tetrachloroethene	<280	<42
Acetone	5,200 ve	2,200 ve	Dibromochloromethane	<3.6	<0.42
2-Propanol	<360	<150	1,2-Dibromoethane (EDB)	<3.2	<0.42
1,1-Dichloroethene	<17	<4.2	Chlorobenzene	<19	<4.2
trans-1,2-Dichloroethene	<17	<4.2	Ethylbenzene	<18	<4.2
Methylene chloride	<3,600	<1,000	1,1,2,2-Tetrachloroethane	<5.8	<0.84
t-Butyl alcohol (TBA)	<510	<170	Nonane	<220	<42
3-Chloropropene	<66	<21	Isopropylbenzene	<100	<21
CFC-113	<32	<4.2	2-Chlorotoluene	<220	<42
Carbon disulfide	<260	<84	Propylbenzene	<100	<21
Methyl t-butyl ether (MTBE)	<76	<21	4-Ethyltoluene	<100	<21
Vinyl acetate	<300	<84	m,p-Xylene	38	8.9
1,1-Dichloroethane	<17	<4.2	o-Xylene	<18	<4.2
cis-1,2-Dichloroethene	<17	<4.2	Styrene	<36	<8.4
Hexane	<150	<42	Bromoform	<87	<8.4
Chloroform	42	8.7	Benzyl chloride	<2.2	<0.42
Ethyl acetate	<300	<84	1,3,5-Trimethylbenzene	<100	<21
Tetrahydrofuran	<12	<4.2	1,2,4-Trimethylbenzene	<100	<21
2-Butanone (MEK)	<120	<42	1,3-Dichlorobenzene	<25	<4.2
1,2-Dichloroethane (EDC)	<1.7	<0.42	1,4-Dichlorobenzene	<10	<1.7
1,1,1-Trichloroethane	<23	<4.2	1,2-Dichlorobenzene	<25	<4.2
Carbon tetrachloride	<26	<4.2	1,2,4-Trichlorobenzene	<31	<4.2
Benzene	<13	<4.2	Naphthalene	<2.4 j	<0.46 j
Cyclohexane	<290	<84	Hexachlorobutadiene	<9	<0.84

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Pioneer Technologies Corp
Date Received:	Not Applicable	Project:	Sunset Auburn, F&BI 007273
Date Collected:	Not Applicable	Lab ID:	00-1621 mb
Date Analyzed:	07/20/20	Data File:	072013.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	97	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Propene	<1.2	<0.7	1,2-Dichloropropane	<0.23	<0.05
Dichlorodifluoromethane	<0.49	<0.1	1,4-Dioxane	<0.36 ca	<0.1 ca
Chloromethane	<3.7	<1.8	2,2,4-Trimethylpentane	<4.7	<1
F-114	<0.7	<0.1	Methyl methacrylate	<4.1	<1
Vinyl chloride	<0.26	<0.1	Heptane	<4.1	<1
1,3-Butadiene	<0.022	<0.01	Bromodichloromethane	<0.067	<0.01
Butane	<2.4	<1	Trichloroethene	<0.27	<0.05
Bromomethane	<1.6	<0.4	cis-1,3-Dichloropropene	<0.45	<0.1
Chloroethane	<2.6	<1	4-Methyl-2-pentanone	<4.1	<1
Vinyl bromide	<0.44	<0.1	trans-1,3-Dichloropropene	<0.45	<0.1
Ethanol	<7.5	<4	Toluene	<19	<5
Acrolein	<2.1	<0.9	1,1,2-Trichloroethane	<0.11	<0.02
Pentane	<3	<1	2-Hexanone	<4.1	<1
Trichlorofluoromethane	<2.2	<0.4	Tetrachloroethene	<6.8	<1
Acetone	<4.8	<2	Dibromochloromethane	<0.085	<0.01
2-Propanol	<8.6	<3.5	1,2-Dibromoethane (EDB)	<0.077	<0.01
1,1-Dichloroethene	<0.4	<0.1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	<0.43	<0.1
Methylene chloride	<87	<25	1,1,2,2-Tetrachloroethane	<0.14	<0.02
t-Butyl alcohol (TBA)	<12	<4	Nonane	<5.2	<1
3-Chloropropene	<1.6	<0.5	Isopropylbenzene	<2.5	<0.5
CFC-113	<0.77	<0.1	2-Chlorotoluene	<5.2	<1
Carbon disulfide	<6.2	<2	Propylbenzene	<2.5	<0.5
Methyl t-butyl ether (MTBE)	<1.8	<0.5	4-Ethyltoluene	<2.5	<0.5
Vinyl acetate	<7	<2	m,p-Xylene	<0.87	<0.2
1,1-Dichloroethane	<0.4	<0.1	o-Xylene	<0.43	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1	Styrene	<0.85	<0.2
Hexane	<3.5	<1	Bromoform	<2.1	<0.2
Chloroform	<0.015 j	<0.003 j	Benzyl chloride	<0.052	<0.01
Ethyl acetate	<7.2	<2	1,3,5-Trimethylbenzene	<2.5	<0.5
Tetrahydrofuran	<0.29	<0.1	1,2,4-Trimethylbenzene	<2.5	<0.5
2-Butanone (MEK)	<2.9	<1	1,3-Dichlorobenzene	<0.6	<0.1
1,2-Dichloroethane (EDC)	<0.04	<0.01	1,4-Dichlorobenzene	<0.24	<0.04
1,1,1-Trichloroethane	<0.55	<0.1	1,2-Dichlorobenzene	<0.6	<0.1
Carbon tetrachloride	<0.63	<0.1	1,2,4-Trichlorobenzene	<0.74	<0.1
Benzene	<0.32	<0.1	Naphthalene	0.057 j lc	0.011 j lc
Cyclohexane	<6.9	<2	Hexachlorobutadiene	<0.21	<0.02

Date of Report: 08/05/20
Date Received: 07/16/20
Project: Sunset Auburn, F&BI 007273

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD MA-APH

Laboratory Code: 007316-02 1/8.3 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
APH EC5-8 aliphatics	ug/m3	620	550	12
APH EC9-12 aliphatics	ug/m3	7,400	8,100	9
APH EC9-10 aromatics	ug/m3	<210	<210	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	67	82	70-130
APH EC9-12 aliphatics	ug/m3	67	118	70-130
APH EC9-10 aromatics	ug/m3	67	118	70-130

Date of Report: 08/05/20
Date Received: 07/16/20
Project: Sunset Auburn, F&BI 007273

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 007316-02 1/8.3 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Propene	ug/m3	16	17	6
Dichlorodifluoromethane	ug/m3	<4.1	<4.1	nm
Chloromethane	ug/m3	<31	<31	nm
F-114	ug/m3	<5.8	<5.8	nm
Vinyl chloride	ug/m3	<2.1	<2.1	nm
1,3-Butadiene	ug/m3	<0.18	<0.18	nm
Butane	ug/m3	<20	<20	nm
Bromomethane	ug/m3	<13	<13	nm
Chloroethane	ug/m3	<22	<22	nm
Vinyl bromide	ug/m3	<3.6	<3.6	nm
Ethanol	ug/m3	<63	<63	nm
Acrolein	ug/m3	<17	<17	nm
Pentane	ug/m3	<24	<24	nm
Trichlorofluoromethane	ug/m3	<19	<19	nm
Acetone	ug/m3	1,000	1,200	18
2-Propanol	ug/m3	<71	<71	nm
1,1-Dichloroethene	ug/m3	<3.3	<3.3	nm
trans-1,2-Dichloroethene	ug/m3	<3.3	<3.3	nm
Methylene chloride	ug/m3	<720	<720	nm
t-Butyl alcohol (TBA)	ug/m3	<100	<100	nm
3-Chloropropene	ug/m3	<13	<13	nm
CFC-113	ug/m3	<6.4	<6.4	nm
Carbon disulfide	ug/m3	<52	<52	nm
Methyl t-butyl ether (MTBE)	ug/m3	<15	<15	nm
Vinyl acetate	ug/m3	<58	<58	nm
1,1-Dichloroethane	ug/m3	<3.4	<3.4	nm
cis-1,2-Dichloroethene	ug/m3	5.3	5.4	2
Hexane	ug/m3	<29	<29	nm
Chloroform	ug/m3	<0.41	<0.41	nm
Ethyl acetate	ug/m3	<60	<60	nm
Tetrahydrofuran	ug/m3	<2.4	<2.4	nm
2-Butanone (MEK)	ug/m3	75	75	0
1,2-Dichloroethane (EDC)	ug/m3	<0.34	<0.34	nm
1,1,1-Trichloroethane	ug/m3	<4.5	<4.5	nm
Carbon tetrachloride	ug/m3	<5.2	<5.2	nm
Benzene	ug/m3	<2.7	<2.7	nm
Cyclohexane	ug/m3	<57	<57	nm
1,2-Dichloropropane	ug/m3	<1.9	<1.9	nm
1,4-Dioxane	ug/m3	<3	<3	nm
2,2,4-Trimethylpentane	ug/m3	<39	<39	nm

Date of Report: 08/05/20
Date Received: 07/16/20
Project: Sunset Auburn, F&BI 007273

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 007316-02 1/8.3 (Duplicate, continued)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Methyl methacrylate	ug/m3	<34	<34	nm
Heptane	ug/m3	<34	<34	nm
Bromodichloromethane	ug/m3	<0.56	<0.56	nm
Trichloroethene	ug/m3	<2.2	<2.2	nm
cis-1,3-Dichloropropene	ug/m3	<3.8	<3.8	nm
4-Methyl-2-pentanone	ug/m3	<34	<34	nm
trans-1,3-Dichloropropene	ug/m3	<3.8	<3.8	nm
Toluene	ug/m3	<160	<160	nm
1,1,2-Trichloroethane	ug/m3	<0.91	<0.91	nm
2-Hexanone	ug/m3	<34	<34	nm
Tetrachloroethene	ug/m3	<56	<56	nm
Dibromochloromethane	ug/m3	<0.71	<0.71	nm
1,2-Dibromoethane (EDB)	ug/m3	<0.64	<0.64	nm
Chlorobenzene	ug/m3	<3.8	<3.8	nm
Ethylbenzene	ug/m3	<3.6	<3.6	nm
1,1,2,2-Tetrachloroethane	ug/m3	<1.1	<1.1	nm
Nonane	ug/m3	<44	<44	nm
Isopropylbenzene	ug/m3	<20	<20	nm
2-Chlorotoluene	ug/m3	<43	<43	nm
Propylbenzene	ug/m3	<20	<20	nm
4-Ethyltoluene	ug/m3	<20	<20	nm
m,p-Xylene	ug/m3	8.4	9.5	12
o-Xylene	ug/m3	4.3	4.9	13
Styrene	ug/m3	<7.1	<7.1	nm
Bromoform	ug/m3	<17	<17	nm
Benzyl chloride	ug/m3	<0.43	<0.43	nm
1,3,5-Trimethylbenzene	ug/m3	<20	<20	nm
1,2,4-Trimethylbenzene	ug/m3	<20	<20	nm
1,3-Dichlorobenzene	ug/m3	<5	<5	nm
1,4-Dichlorobenzene	ug/m3	<2	<2	nm
1,2-Dichlorobenzene	ug/m3	<5	<5	nm
1,2,4-Trichlorobenzene	ug/m3	<6.2	<6.2	nm
Naphthalene	ug/m3	<2.2	<2.2	nm
Hexachlorobutadiene	ug/m3	<1.8	<1.8	nm

Date of Report: 08/05/20
Date Received: 07/16/20
Project: Sunset Auburn, F&BI 007273

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Propene	ug/m3	23	90	70-130
Dichlorodifluoromethane	ug/m3	67	98	70-130
Chloromethane	ug/m3	28	95	70-130
F-114	ug/m3	94	91	70-130
Vinyl chloride	ug/m3	35	93	70-130
1,3-Butadiene	ug/m3	30	96	70-130
Butane	ug/m3	32	92	70-130
Bromomethane	ug/m3	52	94	70-130
Chloroethane	ug/m3	36	92	70-130
Vinyl bromide	ug/m3	59	103	70-130
Ethanol	ug/m3	25	82	70-130
Acrolein	ug/m3	31	92	70-130
Pentane	ug/m3	40	86	70-130
Trichlorofluoromethane	ug/m3	76	100	70-130
Acetone	ug/m3	32	87	70-130
2-Propanol	ug/m3	33	85	70-130
1,1-Dichloroethene	ug/m3	54	95	70-130
trans-1,2-Dichloroethene	ug/m3	54	92	70-130
Methylene chloride	ug/m3	94	89	70-130
t-Butyl alcohol (TBA)	ug/m3	41	92	70-130
3-Chloropropene	ug/m3	42	90	70-130
CFC-113	ug/m3	100	93	70-130
Carbon disulfide	ug/m3	42	87	70-130
Methyl t-butyl ether (MTBE)	ug/m3	49	100	70-130
Vinyl acetate	ug/m3	48	117	70-130
1,1-Dichloroethane	ug/m3	55	89	70-130
cis-1,2-Dichloroethene	ug/m3	54	95	70-130
Hexane	ug/m3	48	89	70-130
Chloroform	ug/m3	66	90	70-130
Ethyl acetate	ug/m3	49	85	70-130
Tetrahydrofuran	ug/m3	40	94	70-130
2-Butanone (MEK)	ug/m3	40	95	70-130
1,2-Dichloroethane (EDC)	ug/m3	55	95	70-130
1,1,1-Trichloroethane	ug/m3	74	93	70-130
Carbon tetrachloride	ug/m3	85	98	70-130
Benzene	ug/m3	43	89	70-130
Cyclohexane	ug/m3	46	90	70-130
1,2-Dichloropropane	ug/m3	62	89	70-130
1,4-Dioxane	ug/m3	49	95	70-130
2,2,4-Trimethylpentane	ug/m3	63	92	70-130

Date of Report: 08/05/20
Date Received: 07/16/20
Project: Sunset Auburn, F&BI 007273

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample (Continued)

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Methyl methacrylate	ug/m3	55	101	70-130
Heptane	ug/m3	55	97	70-130
Bromodichloromethane	ug/m3	90	91	70-130
Trichloroethene	ug/m3	73	89	70-130
cis-1,3-Dichloropropene	ug/m3	61	101	70-130
4-Methyl-2-pentanone	ug/m3	55	90	70-130
trans-1,3-Dichloropropene	ug/m3	61	100	70-130
Toluene	ug/m3	51	100	70-130
1,1,2-Trichloroethane	ug/m3	74	87	70-130
2-Hexanone	ug/m3	55	89	70-130
Tetrachloroethene	ug/m3	92	88	70-130
Dibromochloromethane	ug/m3	120	92	70-130
1,2-Dibromoethane (EDB)	ug/m3	100	98	70-130
Chlorobenzene	ug/m3	62	104	70-130
Ethylbenzene	ug/m3	59	95	70-130
1,1,2,2-Tetrachloroethane	ug/m3	93	101	70-130
Nonane	ug/m3	71	105	70-130
Isopropylbenzene	ug/m3	66	94	70-130
2-Chlorotoluene	ug/m3	70	107	70-130
Propylbenzene	ug/m3	66	100	70-130
4-Ethyltoluene	ug/m3	66	111	70-130
m,p-Xylene	ug/m3	120	101	70-130
o-Xylene	ug/m3	59	98	70-130
Styrene	ug/m3	58	105	70-130
Bromoform	ug/m3	140	94	70-130
Benzyl chloride	ug/m3	70	118	70-130
1,3,5-Trimethylbenzene	ug/m3	66	106	70-130
1,2,4-Trimethylbenzene	ug/m3	66	108	70-130
1,3-Dichlorobenzene	ug/m3	81	104	70-130
1,4-Dichlorobenzene	ug/m3	81	97	70-130
1,2-Dichlorobenzene	ug/m3	81	107	70-130
1,2,4-Trichlorobenzene	ug/m3	100	103	70-130
Naphthalene	ug/m3	71	104	70-130
Hexachlorobutadiene	ug/m3	140	101	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 007273
Work Order Number: 2007389

August 04, 2020

Attention Michael Erdahl:

Fremont Analytical, Inc. received 11 sample(s) on 7/28/2020 for the analyses presented in the following report.

Major Gases by EPA Method 3C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,



Brianna Barnes
Project Manager

Date: *08/04/2020*

CLIENT: Friedman & Bruya
Project: 007273
Work Order: 2007389

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2007389-001	AA-AA-01-071520	07/27/2020 2:00 PM	07/28/2020 11:33 AM
2007389-002	IA-IA-01-071520	07/27/2020 2:00 PM	07/28/2020 11:33 AM
2007389-003	IA-IA-01-071520-(01)	07/27/2020 2:00 PM	07/28/2020 11:33 AM
2007389-004	SG-SG-01-071520-1-3	07/27/2020 2:00 PM	07/28/2020 11:33 AM
2007389-005	SG-SG-01-071520-1-3-(01)	07/27/2020 2:00 PM	07/28/2020 11:33 AM
2007389-006	IA-IA-02-071520	07/27/2020 2:00 PM	07/28/2020 11:33 AM
2007389-007	SG-SG-02-071520	07/27/2020 2:00 PM	07/28/2020 11:33 AM
2007389-008	IA-IA-03-071520	07/27/2020 2:00 PM	07/28/2020 11:33 AM
2007389-009	SG-SG-03-071520	07/27/2020 2:00 PM	07/28/2020 11:33 AM
2007389-010	IA-IA-04-071520	07/27/2020 2:00 PM	07/28/2020 11:33 AM
2007389-011	SG-SG-04-071520	07/27/2020 2:00 PM	07/28/2020 11:33 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2007389**
Date: **8/4/2020**

CLIENT: Friedman & Bruya
Project: 007273

WorkOrder Narrative:

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Major gases are reported as % ratio of the Major Gases analyzed (Carbon dioxide, Carbon Monoxide, Methane, Nitrogen, Oxygen and Hydrogen).

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS). The LCS is processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Note: The estimated BTU calculation is based off of the methane result.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

CLIENT: Friedman & Bruya
Project: 007273

Lab ID: 2007389-001 **Collection Date:** 7/27/2020 2:00:00 PM
Client Sample ID: **AA-AA-01-071520** **Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R60812		Analyst: IH
Carbon Dioxide	1.29	0.0965	D	%	1.93	7/28/2020 3:18:00 PM
Methane	2.44	0.0965	D	%	1.93	7/28/2020 3:18:00 PM
Oxygen	31.2	0.0965	D	%	1.93	7/28/2020 3:18:00 PM

NOTES:
Sample arrived diluted with N2. DF: 1.93

Lab ID: 2007389-002 **Collection Date:** 7/27/2020 2:00:00 PM
Client Sample ID: **IA-IA-01-071520** **Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R60812		Analyst: IH
Carbon Dioxide	0.139	0.0880	D	%	1.76	7/28/2020 3:33:00 PM
Methane	ND	0.0880	D	%	1.76	7/28/2020 3:33:00 PM
Oxygen	31.1	0.0880	D	%	1.76	7/28/2020 3:33:00 PM

NOTES:
Sample arrived diluted with N2. DF: 1.76

Lab ID: 2007389-003 **Collection Date:** 7/27/2020 2:00:00 PM
Client Sample ID: **IA-IA-01-071520-(01)** **Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R60812		Analyst: IH
Carbon Dioxide	0.304	0.0785	D	%	1.57	7/28/2020 3:47:00 PM
Methane	ND	0.0785	D	%	1.57	7/28/2020 3:47:00 PM
Oxygen	34.3	0.0785	D	%	1.57	7/28/2020 3:47:00 PM

NOTES:
Sample arrived diluted with N2. DF: 1.57

CLIENT: Friedman & Bruya
Project: 007273

Lab ID: 2007389-004 **Collection Date:** 7/27/2020 2:00:00 PM
Client Sample ID: **SG-SG-01-071520-1-3** **Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R60812		Analyst: IH
Carbon Dioxide	24.2	0.0815	D	%	1.63	7/28/2020 4:02:00 PM
Methane	42.7	0.0815	D	%	1.63	7/28/2020 4:02:00 PM
Oxygen	5.87	0.0815	D	%	1.63	7/28/2020 4:02:00 PM

NOTES:
Sample arrived diluted with N2. DF: 1.63

Lab ID: 2007389-005 **Collection Date:** 7/27/2020 2:00:00 PM
Client Sample ID: **SG-SG-01-071520-1-3-(01)** **Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R60812		Analyst: IH
Carbon Dioxide	23.0	0.0765	D	%	1.53	7/28/2020 4:16:00 PM
Methane	40.6	0.0765	D	%	1.53	7/28/2020 4:16:00 PM
Oxygen	9.83	0.0765	D	%	1.53	7/28/2020 4:16:00 PM

NOTES:
Sample arrived diluted with N2. DF: 1.53

Lab ID: 2007389-006 **Collection Date:** 7/27/2020 2:00:00 PM
Client Sample ID: **IA-IA-02-071520** **Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R60812		Analyst: IH
Carbon Dioxide	0.357	0.0795	D	%	1.59	7/28/2020 4:31:00 PM
Methane	ND	0.0795	D	%	1.59	7/28/2020 4:31:00 PM
Oxygen	27.7	0.0795	D	%	1.59	7/28/2020 4:31:00 PM

NOTES:
Sample arrived diluted with N2. DF: 1.59

CLIENT: Friedman & Bruya
Project: 007273

Lab ID: 2007389-007 **Collection Date:** 7/27/2020 2:00:00 PM
Client Sample ID: **SG-SG-02-071520** **Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R60812		Analyst: IH
Carbon Dioxide	18.1	0.0805	D	%	1.61	7/28/2020 4:46:00 PM
Methane	ND	0.0805	D	%	1.61	7/28/2020 4:46:00 PM
Oxygen	13.0	0.0805	D	%	1.61	7/28/2020 4:46:00 PM

NOTES:
Sample arrived diluted with N2. DF: 1.61

Lab ID: 2007389-008 **Collection Date:** 7/27/2020 2:00:00 PM
Client Sample ID: **IA-IA-03-071520** **Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R60812		Analyst: IH
Carbon Dioxide	0.632	0.0805	D	%	1.61	7/28/2020 5:00:00 PM
Methane	ND	0.0805	D	%	1.61	7/28/2020 5:00:00 PM
Oxygen	30.1	0.0805	D	%	1.61	7/28/2020 5:00:00 PM

NOTES:
Sample arrived diluted with N2. DF: 1.61

Lab ID: 2007389-009 **Collection Date:** 7/27/2020 2:00:00 PM
Client Sample ID: **SG-SG-03-071520** **Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R60812		Analyst: IH
Carbon Dioxide	ND	0.0810	D	%	1.62	7/28/2020 5:14:00 PM
Methane	ND	0.0810	D	%	1.62	7/28/2020 5:14:00 PM
Oxygen	28.1	0.0810	D	%	1.62	7/28/2020 5:14:00 PM

NOTES:
Sample arrived diluted with N2. DF: 1.62

Analytical Report

Work Order: **2007389**
Date Reported: **8/4/2020**

CLIENT: Friedman & Bruya
Project: 007273

Lab ID: 2007389-010 **Collection Date:** 7/27/2020 2:00:00 PM
Client Sample ID: **IA-IA-04-071520** **Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R60812		Analyst: IH
Carbon Dioxide	ND	0.0820	D	%	1.64	7/28/2020 5:28:00 PM
Methane	ND	0.0820	D	%	1.64	7/28/2020 5:28:00 PM
Oxygen	28.4	0.0820	D	%	1.64	7/28/2020 5:28:00 PM

NOTES:
Sample arrived diluted with N2. DF: 1.64

Lab ID: 2007389-011 **Collection Date:** 7/27/2020 2:00:00 PM
Client Sample ID: **SG-SG-04-071520** **Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R60812		Analyst: IH
Carbon Dioxide	23.1	0.0840	D	%	1.68	7/28/2020 5:43:00 PM
Methane	ND	0.0840	D	%	1.68	7/28/2020 5:43:00 PM
Oxygen	10.1	0.0840	D	%	1.68	7/28/2020 5:43:00 PM

NOTES:
Sample arrived diluted with N2. DF: 1.68

Work Order: 2007389
CLIENT: Friedman & Bruya
Project: 007273

QC SUMMARY REPORT

Major Gases by EPA Method 3C

Sample ID: **LCS-R60812** SampType: **LCS** Units: **%** Prep Date: **7/28/2020** RunNo: **60812**
Client ID: **LCSW** Batch ID: **R60812** Analysis Date: **7/28/2020** SeqNo: **1218722**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon Dioxide	99.3	0.0500	100.0	0	99.3	70	130				
Methane	99.6	0.0500	100.0	0	99.6	70	130				
Oxygen	106	0.0500	100.0	0	106	70	130				

Sample ID: **2007360-001AREP** SampType: **REP** Units: **%** Prep Date: **7/28/2020** RunNo: **60812**
Client ID: **BATCH** Batch ID: **R60812** Analysis Date: **7/28/2020** SeqNo: **1218717**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon Dioxide	11.3	0.0500						11.22	1.11	30	H
Methane	51.9	0.0500						50.77	2.21	30	H
Oxygen	4.81	0.0500						6.246	26.0	30	H

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**2007389**
Logged by:	**Clare Griggs**	Date Received:	**7/28/2020 11:33:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	FedEx		

Log In

3.	Coolers are present?	Yes ☐	No ☑	NA ☐
		Air Samples		
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
6.	Was an attempt made to cool the samples?	Yes ☐	No ☐	NA ☑
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☐	No ☐	NA ☑
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY 2007389

Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 3012 16th Ave W
City, State, ZIP Seattle, WA 98119
Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER Fremont

PROJECT NAME/NO.	PO #
007273	A-307

REMARKS Generated from TO-15 Canisters
Please Email Results EQuIS

TURNAROUND TIME
☒ Standard TAT
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	O_2, CO_2, CH_4							Notes (Dilution Factor:)
AA-AA-01-071520		7/27/20	1400	air	1				X							1.93
IA-IA-01-071520					1				X							1.76
IA-IA-01-071520-(01)					1				X							1.57
SG-SG-01-071520-1-3					1				X							1.63
SG-SG-01-071520-1-3-(01)					1				X							1.53
IA-IA-02-071520					1				X							1.59
SG-SG-02-071520					1				X							1.61
IA-IA-03-071520					1				X							1.61
SG-SG-03-071520					1				X							1.62
IA-IA-04-071520					1				X							1.64
SG-SG-04-071520		↓	↓	↓	1				X							1.68
									X							
									X							

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Michael Erdahl	Friedman & Bruya	7/28/20	0800
Received by:	B. Barnes	FAI	7/28/20	1133
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

007273

SAMPLE CHAIN OF CUSTODY

ME 07-16-20

Report To Joel Hecker - PTC
Company PTC - Pioneer Technologies
Address 5205 Corporate Ctr. Ct. SE ste A
City, State, ZIP Lacey, WA 98503
Phone 360-828-3779 Email hecker@pioneertech.com

SAMPLERS (signature) [signature]

PROJECT NAME & ADDRESS: ~~Sunset~~ Auburn

PO #

NOTES:

INVOICE TO

Page # 1 of 2

TURNAROUND TIME
- [x] Standard
- [ ] RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Default: Clean after 3 days
- [ ] Archive (Fee may apply)

SAMPLE INFORMATION

Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	ANALYSIS REQUESTED: TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium	Oxygen, CO_2, Methane	Notes
AA-AA-01-071520	01	20547	06607	(IA) / SG	7/15/20	>30	0903	6	1827	X	X		X		X	Use Methods
IA-IA-01-071520	02	18563	07851	(IA) / SG		>30	1005	6	1829							EPA Method TO-15 SIM;
IA-IA-01-071520-(01)	03	23229	05356	(IA) / SG		>30	1005	5	1829							Mass DEP APH Test
SG-SG-01-071520-1-3	04	18580	18	IA / (SG)		>30	1020	5	1658							Methods WSC-CAM-IX;
SG-SG-01-071520-1-3-(01)	05	18573	111	IA / (SG)		>30	1020	2	1658							EPA Method 3C
IA-IA-02-071520	06	18579	05352	(IA) / SG		>30	1022	6	1838							
SG-SG-02-071520	07	23227	31	IA / (SG)		>30	1030	4 / 4	1750 / ~~1200~~							4Hr. 1750 Feet
IA-IA-03-071520	08	20554	07845	(IA) / SG		>30	1033	7	1840							

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Nathan Steer	PTC	7/16/20	10:07
Received by: [signature]	V IN H	FBI	7/16/20	10:07
Relinquished by:				
Received by:		Samples received at 21 °C		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SAMPLE CHAIN OF CUSTODY

007273 ME 07-16-20

Page # 2 of 2

Report To

Company

Address See page 1

City, State, ZIP

Phone Email

SAMPLERS (signature)

PROJECT NAME & ADDRESS: Sunset Auburn

PO #

NOTES:

INVOICE TO

TURNAROUND TIME
- ☐ Standard
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Default: Clean after 3 days
- ☐ Archive (Fee may apply)

SAMPLE INFORMATION

Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	ANALYSIS REQUESTED: TO-15 Full Scan	TO-15 BTEXN	TO-15 cVOCs	APH	Helium	3C Methane	Notes
SG-SG-03-071520	09	18576	03	IA / (SG)	7/15/20	28	1038	4	1700	X			X		X	See methods on Page 1
IA-IA-04-071520	10	20544	07844	(IA) / SG	↓	29	1042	7	1843	↓			↓		↓	Possible ↑ Acetone
SG-SG-04-071520	11	20555	17	IA / (SG)	↓	730	1047	5	1815	↓			↓		↓	Possible acetone
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COCTO-15.DOC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Nathan Stari	PTC	7/16/20	10:07
Received by:	JINH	FBI	7/16/20	10:07
Relinquished by:				
Received by:		Samples received at 21 °C		

Data Quality Review

July 2020 RI Sampling and Analysis
3317, 3319, and 3401 Auburn Way North, Auburn, Washington

This document summarizes the cursory data quality review performed by PIONEER Technologies Corporation (PIONEER) in December 2020 for the laboratory analysis results generated during the aforementioned investigation. Precision, accuracy, representativeness, comparability, sensitivity, and completeness were assessed during the data quality review.

1. Precision

Precision was assessed via the relative percent difference (RPD) for field duplicates and matrix spike (MS)/matrix spike duplicate (MSD) pairs. The following commonly used RPDs are accepted in the environmental consulting industry and were used for this evaluation: 50% for soil duplicates and 35% for groundwater, soil gas, and indoor air duplicates. The RPDs for the soil, groundwater, soil gas, and indoor air field duplicates are presented in Table 1 through 4, respectively.

The RPD of the results from analyses of target constituents in the field duplicate soil samples were within the project precision limits of 50%, with the exception of n-propylbenzene in the duplicate soil samples from MW9 (see Table 1). N-propylbenzene was detected in only one of the two duplicate soil samples, indicating heterogeneity in the sample matrix. Although the RPD indicates a lack of agreement between samples for n-propylbenzene, both duplicate samples had constituent concentrations that were less than applicable screening levels (SLs; PIONEER 2020a). Therefore, this lack of agreement does not affect the use of the data or the conclusions.

The RPDs of the results from analyses of target constituents in the field duplicate groundwater samples were within the project precision limits of 35%, with the exception of dissolved selenium in the duplicate groundwater samples collected from B32 (see Table 2). The RPD of 39.6% slightly exceeded the acceptable limit. Although the RPD indicates a lack of agreement between samples for dissolved selenium, both duplicate groundwater samples had constituent concentrations that were less than applicable SLs (PIONEER 2020a). Therefore, this lack of agreement does not affect the use of the data or the conclusions.

The RPDs of the results from analyses of target constituents in the field duplicate soil gas and indoor air samples were within the project precision limits of 35% (see Table 3 and Table 4, respectively).

MS/MSD RPD results were evaluated to determine the reproducibility (precision) of the analytical method. Reproducibility values were compared to control limits established and updated by the laboratory based on its historical operation. The analytical reports present all reported MS/MSD RPD values. All reported MS/MSD RPDs were within the acceptable ranges.[1] The methods were identified by the laboratory to be in control (e.g. acceptable range of precision) based on the laboratory control sample (LCS)/LCS duplicate (LCSD) results. Thus, further data qualification beyond what was reported by the laboratories was not necessary.

2. Accuracy

Accuracy was assessed by analysis of trip blanks and laboratory method blanks as well as continuing calibration verification (CCV) and recoveries in LCS/LCSDs, MS/MSDs, and surrogates.[2] Full laboratory quality control (QC) information is provided in the analytical reports.

[1] MS/MSD RPDs were evaluated based on control limits in the laboratory reports (rather than RPDs included in the Quality Assurance Project Plan [QAPP]).
[2] LCS/LCSD, MS/MSD, and surrogate recoveries were evaluated based on control limits in the laboratory reports (rather than recoveries included in the QAPP).

No VOCs were measured at concentrations greater than laboratory RLs in the VOC trip blanks. Method blanks were performed for each constituent and analyzed daily to assess the effect of the laboratory environment on the analytical results. No constituents were detected in the analyzed method blanks.

CCVs were evaluated to determine whether the instrument was within acceptable calibration throughout the period in which samples were analyzed (i.e., to verify that the initial calibration was applicable during the sample analyses). The laboratories reported the CCV was acceptable for all analyses with the following exceptions:

- The TO-15 calibration standard failed the acceptance criteria for 1,4-dioxane in several soil gas and indoor air samples. The reported 1,4-dioxane values were considered estimates. 1,4-dioxine is not expected to be a contaminant of concern based on past site usage.
- Several total petroleum hydrocarbon (TPH) ranges and volatile organic compounds (VOCs; specifically, acetone, benzene, butane, cyclohexane, ethanol, heptane, hexane, 2-propanol, propene, pentane, 2,2,4-trimethylpentane) exceeded the calibration range of the instrument performing the analyses in one or more soil gas and indoor air samples. These values were considered estimates.

The LCS/LCSD is a sample matrix, free from constituents, spiked with verified known amounts of constituents or a material containing known and verified amounts of constituents. It is generally used to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The LCS and LCSD percent recovery results were within acceptable control limits with one exception:

- The LCS recoveries for methyl-ethyl-ketone and 2-hexanone in groundwater slightly exceeded the acceptable recovery range but were within 10% of the uppermost acceptable range. The LCSD values were within the acceptable recovery range. Even with the potential high bias, the highest reported concentrations of both analytes were less than the groundwater SL (PIONEER 2020a); therefore, this QC result did not negatively affect sample results.

The MS and MSD percent recovery results were evaluated to determine whether or not the sample matrix was interfering with the laboratory analyses. MS and MSD recoveries were compared to control limits established and updated by the laboratory based on its historical operation. Notes on the MS and MSD recoveries reported by the laboratories are provided below:

- The MS and MSD recoveries for barium and lead in soil exceeded the acceptable recovery ranges, indicating a potentially high bias. Even with the potential high bias, the highest reported concentrations of both analytes were less than the most restrictive soil SL (PIONEER 2020a); therefore, this QC result did not negatively affect sample results.
- The MS and MSD recoveries for 1,3,5-trimethylbenzene and styrene in groundwater were less than the acceptable recovery range, indicating potentially low biases. The low recoveries indicate a possible matrix effect. Even with the potentially low bias, the laboratory RLs were significantly less than the groundwater SLs for 1,3,5-trimethylbenzene and styrene.

Each sample analyzed for organic constituents contained surrogate spike compounds. The surrogate recovery percentage is used to determine if the analytical instruments are operating within acceptable control limits. Surrogate recoveries were compared to control limits established and updated by the laboratory based on its historical operation. Surrogate recoveries were within acceptable control limits.

3. Representativeness

Representativeness was assessed by evaluating the sample collection, handling, preservation, and analysis procedures. All samples were collected, handled, preserved, and analyzed in accordance with the RI Work Plan (PIONEER 2020a), which was designed to obtain representative samples. Soil and groundwater samples were placed on ice and shipped overnight to the laboratory. The reported temperature range of the samples from nine of the 10 coolers shipped to the laboratory was acceptable (less than 6 degrees Celsius). One cooler got lost in shipment and arrived to the laboratory above the acceptable temperature (20.8 degrees Celsius). Soil gas and indoor air samples were hand-delivered to the laboratory on the day of collection.[3] The laboratory subcontracted out multiple analyses. In those instances where analyses were subcontracted, samples were delivered on ice via overnight shipping to the laboratory, for samples required to be kept cool. Since the samples were collected in the summer, delivered on ice, and delivered promptly to the laboratories, no additional data qualification is necessary. The cooler of samples that arrived outside of the acceptable temperature range should be considered estimated values. A 'J' qualifier was added to the data.[4,5]

In addition, all samples were extracted and analyzed within appropriate holding times listed in the QAPP, with the exception of the select soil and groundwater samples analyzed for total organic carbon (TOC), extractable petroleum hydrocarbons (EPH), and volatile petroleum hydrocarbons (VPH), which were add-on analyses completed after receipt of initial soil and groundwater data.[6] No SL is available for TOC, EPH, or VPH; therefore, this QC result did not negatively affect sample results.

4. Comparability

Comparability was assessed by comparing current sample collection and analysis procedures with historical procedures. The samples were collected and analyzed with standard procedures and are comparable with historical data as qualified by the laboratories.

5. Sensitivity

Sensitivity was assessed by comparing actual reporting limits (RLs) to applicable SLs for all analyzed constituents (PIONEER 2020a). The laboratory analytical reports also listed the method detection limits (MDLs) for each soil and groundwater constituent. Analytical methods and laboratories were selected to achieve low target reporting limits. Almost all of the actual RLs were less than the corresponding SLs for unrestricted land use. The only soil constituents with an actual RL exceeding a corresponding SL are provided in the table below:

[3] Soil gas and indoor air samples are shipped at ambient temperature.
[4] All requested analysis for the following soil samples were affected: S-B31-3-5, S-B32-3-5, S-B33-2-4, S-B42-4-6, S-B45-8-10, and S-MW-10-6-8.
[5] A subset of requested analysis for the following groundwater samples were affected: B32 (all analyses), B33 (all analyses), B35 (metals analysis only), B42 (NWTPH-Dx analysis only), B45 (metals analysis only), and a 7/14/20 trip blank (all analyses).
[6] The affected samples were: TOC analysis on soil samples collected from MW8 (6-8) and B33 (2-4); EPH analysis on the soil sample collected from B32 (3-5) and the groundwater sample collected from B44; and VPH analysis on groundwater samples collected from MW3 and MW11.

Constituent	Maximum Soil RL (mg/kg) [1]	Soil-to-GW SL (mg/kg)	Soil Direct Contact Unrestricted Land Use SL (mg/kg)	Soil Direct Contact Commercial/ Industrial Land Use SL (mg/kg)
1,1,2,2-Tetrachloroethane	0.024	0.0012	5.0	660
1,2,3-Trichloropropane	0.024	No Value	0.0063	4.4
1,2-Dichloroethane	0.024	0.023	11	1,400
Ethylene Dibromide (EDB)	0.024	0.00027	0.50	66
Methylene Chloride	0.12	0.021	94	21,000
Vinyl Chloride	0.020	0.0017	0.67	88

[1] Required dilutions were performed on several samples (e.g. the soil samples from MW11) due to constituent concentrations or matrix interferences, which raised RLs above those shown in the table.

The MDL was below the most stringent SL for 1,2-dichloroethane and EDB, which allowed verification that no non-detect values were present above the SL for these constituents. The maximum RLs were less than soil direct contact SLs for unrestricted land use, and groundwater results may also be used to evaluate site groundwater conditions, rather than comparing soil results to soil-to-groundwater SLs.

The only groundwater constituents with an actual RL exceeding a corresponding SL are provided in the table below:

Constituent	Maximum Groundwater RL (ug/L) [1]	Most Stringent Groundwater SL (ug/L)
1,1,2,2-Tetrachloroethane	0.50	0.22
1,2-Dibromo-3-Chloropropane	0.50	0.20
1,2,3-Trichloropropane	0.50	0.00038
Acrylonitrile	0.50	0.081
Ethylene Dibromide (EDB)	0.50	0.050
TPH-HO (Lube Oil)	735	500

[1] Required dilutions were performed on several groundwater samples (e.g. MW3 and MW6) due to constituent concentrations or matrix interferences, which raised RLs above those shown in the table.

The MDL was below the most stringent SL for 1,1,2,2-tetrachloroethane, 1,2-dibromo-3-chloropropane, EDB, and TPH-HO, which allowed verification that no non-detect values were present above the SL for these constituents. Neither 1,2,3-trichloropropane nor acrylonitrile expected to be present in site groundwater based on historical uses of the site.

The only soil gas constituents with an actual RL exceeding a corresponding SL are provided in the table below:

Constituent	Maximum Soil Gas RL (ug/m^3)	Soil Gas Unrestricted Land Use SL (ug/m^3)	Soil Gas Commercial/Industrial Land Use SL (ug/m^3)
1,1,2,2-Tetrachloroethane	5.8	1.4	14
1,1,2-Trichloroethane	4.6	3.0	6.7
1,4-Dichlorobenzene	10	7.6	76
Acrolein	87	0.3	0.67
Benzene	13	11	110
Benzyl Chloride	2.2	1.7	17
Bromoform	85	76	760
Carbon Tetrachloride	26	14	140
Ethylene Dibromide (EDB)	3.2	0.14	1.4
Hexachlorobutadiene	9.0	3.8	38
Methylene Chloride	3,600	2,200	20,000
Vinyl Chloride	11	9.5	95

Current and anticipated future land use is commercial/industrial, therefore, the commercial/industrial SL is most applicable for evaluation. Only acrolein and EDB RLs exceeded the commercial/industrial soil gas SL. The acrolein SL was elevated, but acrolein is not a contaminant expected to be present on-site based on historical site usage. EDB SLs are extremely low and generally unattainable by laboratories.

The only indoor air constituents with an actual RL exceeding a corresponding SL are provided in the table below:

Constituent	Maximum Indoor Air RL (ug/m^3)	Indoor Air Unrestricted Land Use SL (ug/m^3)	Indoor Air Commercial/Industrial Land Use SL (ug/m^3)
1,1,2,2-Tetrachloroethane	0.14	0.043	0.43
1,1,2-Trichloroethane	0.11	0.091	0.20
1,4-Dichlorobenzene	0.24	0.23	2.3
Acrolein	2.1	0.0091	0.020
Benzyl Chloride	0.052	0.051	0.51
Carbon Tetrachloride	0.63	0.42	4.2
Ethylene Dibromide (EDB)	0.077	0.0042	0.42
Hexachlorobutadiene	0.21	0.11	1.1
Methylene Chloride	87	66	600
Naphthalene	0.26	0.074	0.74

Current and proposed future land use is commercial/industrial, therefore, the commercial/industrial indoor air SL is most applicable for evaluation. Only acrolein RLs exceeded the commercial/industrial indoor air SL. Acrolein is not a contaminant expected to be present on-site based on historical site usage.

The actual RLs for soil, groundwater, soil gas, and indoor air were reasonably sensitive for these few constituents with a RL exceeding the most stringent SL. Furthermore, SLs often need to be adjusted up to appropriate RLs per Model Toxics Control Act regulations. Therefore, the actual RLs were considered appropriate for the purposes of this investigation.

6. Completeness

Completeness was assessed by calculating the percentage of useable results to all results. All of the analyte results are useable as qualified. Thus, the completeness of the analytical data is 100 percent. In addition, the actual laboratory analyses matched the requested laboratory analyses, except for the B33 groundwater sample for analysis of TPH in the diesel range and heavy oil range (because the sample bottle broke during transit to the laboratory).

7. Conclusions

The quality of the laboratory analysis results obtained during this investigation appears to be acceptable and all data appear to be usable for the purposes of this investigation. No corrective action or additional data qualification (beyond what was reported by the laboratory or described in this data quality review) appears to be necessary.

References

PIONEER. 2020a. Remedial Investigation Work Plan, Sunset Auburn Site, 3317, 3319, and 3401 Auburn Way North, Auburn, Washington. July.

Table 1: Relative Percent Difference of Soil Sample Field Duplicates

Consituent	Sample Location and Depth Interval (in feet bgs)	Primary Concentration (mg/kg)	Field Duplicate Concentration (mg/kg)	Relative Percent Difference
1,1,1,2-Tetrachloroethane	S-MW-9 (11-13')	0.021 U	0.019 U	9.6%
1,1,1-Trichloroethane		0.021 U	0.019 U	9.6%
1,1,2,2-Tetrachloroethane		0.021 U	0.019 U	9.6%
1,1,2-Trichloroethane		0.021 U	0.019 U	9.6%
1,1-Dichloroethane		0.021 U	0.019 U	9.6%
1,1-Dichloroethene		0.021 U	0.019 U	9.6%
1,1-dichloropropene		0.021 U	0.019 U	9.6%
1,2,3-Trichlorobenzene		0.021 U	0.019 U	9.6%
1,2,3-Trichloropropane		0.021 U	0.019 U	9.6%
1,2,4-Trichlorobenzene		0.021 U	0.019 U	9.6%
1,2,4-Trimethylbenzene		0.021 U	0.019 U	9.6%
1,2-Dibromo-3-chloropropane		0.021 U	0.019 U	9.6%
1,2-Dibromoethane (EDB)		0.021 U	0.019 U	9.6%
1,2-Dichlorobenzene		0.021 U	0.019 U	9.6%
1,2-Dichloroethane		0.021 U	0.019 U	9.6%
1,2-Dichloropropane		0.021 U	0.019 U	9.6%
1,3,5-Trimethylbenzene		0.021 U	0.019 U	9.6%
1,3-Dichlorobenzene		0.021 U	0.019 U	9.6%
1,3-Dichloropropane		0.021 U	0.019 U	9.6%
1,4-Dichlorobenzene		0.021 U	0.019 U	9.6%
2,2-Dichloropropane		0.021 U	0.019 U	9.6%
2-Chlorotoluene		0.021 U	0.019 U	9.6%
2-hexanone		0.10 U	0.094 U	9.8%
4-Chlorotoluene		0.021 U	0.019 U	9.6%
Acetone		0.10 U	0.094 U	9.8%
Acrylonitrile		0.021 U	0.019 U	9.6%
Arsenic		1.9	1.6	21.1%
Benzene		0.021 U	0.019 U	9.6%
Bromobenzene		0.021 U	0.019 U	9.6%
Bromochloromethane		0.021 U	0.019 U	9.6%
Bromodichloromethane		0.021 U	0.019 U	9.6%
Bromoform		0.021 U	0.019 U	9.6%
Bromomethane		0.021 U	0.019 U	9.6%
Carbon disulfide		0.021 U	0.019 U	9.6%
Carbon Tetrachloride		0.021 U	0.019 U	9.6%
Chlorobenzene		0.021 U	0.019 U	9.6%
Chloroethane		0.021 U	0.019 U	9.6%
Chloroform		0.021 U	0.019 U	9.6%
Chloromethane		0.021 U	0.019 U	9.6%
cis-1,2-dichloroethene		0.021 U	0.019 U	9.6%
cis-1,3-Dichloropropene		0.021 U	0.019 U	9.6%
Dibromochloromethane		0.021 U	0.019 U	9.6%
Dibromomethane		0.021 U	0.019 U	9.6%
Dichlorodifluoromethane		0.021 U	0.019 U	9.6%
Ethylbenzene		0.021 U	0.019 U	9.6%
Gasoline		17 U	15 U	9.5%
Hexachlorobutadiene		0.021 U	0.019 U	9.6%
Isopropylbenzene		0.021 U	0.019 U	9.6%
Lead		1.6	1.6	1.9%
m+p-Xylene		0.021 U	0.019 U	9.6%
Methyl ethyl ketone (MEK)		0.10 U	0.094 U	9.8%

Table 1: Relative Percent Difference of Soil Sample Field Duplicates

Consituent	Sample Location and Depth Interval (in feet bgs)	Primary Concentration (mg/kg)	Field Duplicate Concentration (mg/kg)	Relative Percent Difference
Methyl isobutyl ketone (MIBK)	S-MW-9 (11-13')	0.10 U	0.094 U	9.8%
Methylene chloride		0.10 U	0.094 U	9.8%
methyl-t-butyl ether (MTBE)		0.021 U	0.019 U	9.6%
Naphthalene		0.021 U	0.019 U	9.6%
n-Butylbenzene		0.025	0.019 U	27.4%
n-Propylbenzene		0.047	0.019 U	85.1%
o-Xylene		0.021 U	0.019 U	9.6%
p-isopropyltoluene		0.021 U	0.019 U	9.6%
sec-Butylbenzene		0.021 U	0.019 U	9.6%
Styrene		0.021 U	0.019 U	9.6%
tert-Butylbenzene		0.021 U	0.019 U	9.6%
Tetrachloroethene		0.021 U	0.019 U	9.6%
Toluene		0.021 U	0.019 U	9.6%
trans-1,2-Dichloroethene		0.021 U	0.019 U	9.6%
trans-1,3-Dichloropropene		0.021 U	0.019 U	9.6%
Trichloroethene		0.021 U	0.019 U	9.6%
Trichlorofluoromethane		0.021 U	0.019 U	9.6%
Vinyl Chloride		0.021 U	0.019 U	9.6%

Notes:

bgs: below ground surface, mg/kg: milligrams per kilogram.

RPDs exceeding the allowable limit (50%) commonly used in the environmental field are shaded yellow.

Non-detect values (U) are assumed to equal the full reporting limit for the RPD calculation.

Table 2: Relative Percent Difference of Groundwater Sample Field Duplicates

Consituent	Sample Location	Primary Concentration (ug/L)	Field Duplicate Concentration (ug/L)	Relative Percent Difference
1,1,1,2-Tetrachloroethane	GW-B32	0.50 U	0.50 U	0.0%
1,1,1-Trichloroethane		0.50 U	0.50 U	0.0%
1,1,2,2-Tetrachloroethane		0.50 U	0.50 U	0.0%
1,1,2-Trichloroethane		0.50 U	0.50 U	0.0%
1,1-Dichloroethane		0.50 U	0.50 U	0.0%
1,1-Dichloroethene		0.50 U	0.50 U	0.0%
1,1-dichloropropene		0.50 U	0.50 U	0.0%
1,2,3-Trichlorobenzene		0.50 U	0.50 U	0.0%
1,2,3-Trichloropropane		0.50 U	0.50 U	0.0%
1,2,4-Trichlorobenzene		0.50 U	0.50 U	0.0%
1,2,4-Trimethylbenzene		0.50 U	0.50 U	0.0%
1,2-Dibromo-3-chloropropane		0.50 U	0.50 U	0.0%
1,2-Dibromoethane (EDB)		0.50 U	0.50 U	0.0%
1,2-Dichlorobenzene		0.50 U	0.50 U	0.0%
1,2-Dichloroethane		0.50 U	0.50 U	0.0%
1,2-Dichloropropane		0.50 U	0.50 U	0.0%
1,3,5-Trimethylbenzene		0.50 U	0.50 U	0.0%
1,3-Dichlorobenzene		0.50 U	0.50 U	0.0%
1,3-Dichloropropane		0.50 U	0.50 U	0.0%
1,4-Dichlorobenzene		0.50 U	0.50 U	0.0%
1-Methylnaphthalene		0.050 U	0.050 U	0.0%
2,2-Dichloropropane		0.50 U	0.50 U	0.0%
2-Chlorotoluene		0.50 U	0.50 U	0.0%
2-hexanone		2.5 U	2.5 U	0.0%
2-Methylnaphthalene		0.050 U	0.050 U	0.0%
4-Chlorotoluene		0.50 U	0.50 U	0.0%
Acenaphthene		0.050 U	0.050 U	0.0%
Acenaphthylene		0.050 U	0.050 U	0.0%
Acetone		6.4	8.3	25.5%
Acrylonitrile		0.50 U	0.50 U	0.0%
Anthracene		0.050 U	0.050 U	0.0%
Benzene		0.50 U	0.51	2.0%
Benzo[a]anthracene		0.050 U	0.050 U	0.0%
Benzo[a]pyrene		0.050 U	0.050 U	0.0%
Benzo[b]fluoranthene		0.050 U	0.050 U	0.0%
Benzo[ghi]perylene		0.050 U	0.050 U	0.0%
Benzo[k]fluoranthene		0.050 U	0.050 U	0.0%
Bromobenzene		0.50 U	0.50 U	0.0%
Bromochloromethane		0.50 U	0.50 U	0.0%
Bromodichloromethane		0.50 U	0.50 U	0.0%
Bromoform		0.50 U	0.50 U	0.0%
Bromomethane		0.50 U	0.50 U	0.0%
Carbon disulfide		0.50 U	0.50 U	0.0%
Carbon Tetrachloride		0.50 U	0.50 U	0.0%
Chlorobenzene		0.50 U	0.50 U	0.0%
Chloroethane		0.50 U	0.50 U	0.0%
Chloroform		0.50 U	0.50 U	0.0%
Chloromethane		0.50 U	0.50 U	0.0%
Chrysene		0.050 U	0.050 U	0.0%
cis-1,2-dichloroethene		0.50 U	0.50 U	0.0%
cis-1,3-Dichloropropene		0.50 U	0.50 U	0.0%
Dibenz[a,h]anthracene		0.050 U	0.050 U	0.0%

Table 2: Relative Percent Difference of Groundwater Sample Field Duplicates

Consituent	Sample Location	Primary Concentration (ug/L)	Field Duplicate Concentration (ug/L)	Relative Percent Difference
Dibromochloromethane	GW-B32	0.50 U	0.50 U	0.0%
Dibromomethane		0.50 U	0.50 U	0.0%
Dichlorodifluoromethane		0.50 U	0.50 U	0.0%
Diesel		230 U	191	18.5%
Dissolved Arsenic		11	11	0.9%
Dissolved Barium		22	27	20.7%
Dissolved Cadmium		1.0 U	1.0 U	0.0%
Dissolved Chromium		5.7	6.4	11.7%
Dissolved Lead		1.0 U	1.0 U	0.0%
Dissolved Mercury-Icpms		0.10 U	0.10 U	0.0%
Dissolved Selenium		1.6	2.5	39.6%
Dissolved Silver		1.0 U	1.0 U	0.0%
Ethylbenzene		0.50 U	0.50 U	0.0%
Fluoranthene		0.050 U	0.050 U	0.0%
Fluorene		0.050 U	0.050 U	0.0%
Gasoline		200 U	200 U	0.0%
Hexachlorobutadiene		0.50 U	0.50 U	0.0%
Indeno[1,2,3-cd]pyrene		0.050 U	0.050 U	0.0%
Isopropylbenzene		0.50 U	0.50 U	0.0%
Lube Oil		461 U	529 U	13.7%
m+p-Xylene		0.50 U	0.50 U	0.0%
Mercury		0.010 U	0.010 U	0.0%
Methyl ethyl ketone (MEK)		2.5 U	2.5 U	0.0%
Methyl isobutyl ketone (MIBK)		2.5 U	2.5 U	0.0%
Methylene chloride		2.5 U	2.5 U	0.0%
methyl-t-butyl ether (MTBE)		0.50 U	0.50 U	0.0%
Naphthalene		0.50 U	0.50 U	0.0%
Naphthalene		0.050 U	0.050 U	0.0%
n-Butylbenzene		0.50 U	0.50 U	0.0%
n-Propylbenzene		0.50 U	0.50 U	0.0%
o-Xylene		0.50 U	0.50 U	0.0%
Phenanthrene		0.050 U	0.050 U	0.0%
p-isopropyltoluene		0.50 U	0.50 U	0.0%
Pyrene		0.050 U	0.050 U	0.0%
sec-Butylbenzene		0.50 U	0.50 U	0.0%
Styrene		0.50 U	0.50 U	0.0%
tert-Butylbenzene		0.50 U	0.50 U	0.0%
Tetrachloroethene		0.50 U	0.50 U	0.0%
Toluene		0.50 U	0.50 U	0.0%
trans-1,2-Dichloroethene		0.50 U	0.50 U	0.0%
trans-1,3-Dichloropropene		0.50 U	0.50 U	0.0%
Trichloroethene		0.50 U	0.50 U	0.0%
Trichlorofluoromethane		0.50 U	0.50 U	0.0%
Vinyl Chloride		0.50 U	0.50 U	0.0%
1,1,1,2-Tetrachloroethane	GW-MW10	0.50 U	0.50 U	0.0%
1,1,1-Trichloroethane		0.50 U	0.50 U	0.0%
1,1,2,2-Tetrachloroethane		0.50 U	0.50 U	0.0%
1,1,2-Trichloroethane		0.50 U	0.50 U	0.0%
1,1-Dichloroethane		0.50 U	0.50 U	0.0%
1,1-Dichloroethene		0.50 U	0.50 U	0.0%
1,1-dichloropropene		0.50 U	0.50 U	0.0%
1,2,3-Trichlorobenzene		0.50 U	0.50 U	0.0%

Table 2: Relative Percent Difference of Groundwater Sample Field Duplicates

Consituent	Sample Location	Primary Concentration (ug/L)	Field Duplicate Concentration (ug/L)	Relative Percent Difference
1,2,3-Trichloropropane	GW-MW10	0.50 U	0.50 U	0.0%
1,2,4-Trichlorobenzene		0.50 U	0.50 U	0.0%
1,2,4-Trimethylbenzene		0.81	0.82	1.2%
1,2-Dibromo-3-chloropropane(DBCP)		0.50 U	0.50 U	0.0%
1,2-Dibromoethane (EDB)		0.50 U	0.50 U	0.0%
1,2-Dichlorobenzene		0.50 U	0.50 U	0.0%
1,2-Dichloroethane		0.50 U	0.50 U	0.0%
1,2-Dichloropropane		0.50 U	0.50 U	0.0%
1,3,5-Trimethylbenzene		0.50 U	0.50 U	0.0%
1,3-Dichlorobenzene		0.50 U	0.50 U	0.0%
1,3-Dichloropropane		0.50 U	0.50 U	0.0%
1,4-Dichlorobenzene		0.50 U	0.50 U	0.0%
2,2-Dichloropropane		0.50 U	0.50 U	0.0%
2-Chlorotoluene		0.50 U	0.50 U	0.0%
2-hexanone		2.5 U	2.5 U	0.0%
4-Chlorotoluene		0.50 U	0.50 U	0.0%
Acetone		4.3	4.2	2.6%
Acrylonitrile		0.50 U	0.50 U	0.0%
Benzene		0.50 U	0.50 U	0.0%
Bromobenzene		0.50 U	0.50 U	0.0%
Bromochloromethane		0.50 U	0.50 U	0.0%
Bromodichloromethane		0.50 U	0.50 U	0.0%
Bromoform		0.50 U	0.50 U	0.0%
Bromomethane		0.50 U	0.50 U	0.0%
Carbon disulfide		1.2	1.2	4.2%
Carbon Tetrachloride		0.50 U	0.50 U	0.0%
Chlorobenzene		0.50 U	0.50 U	0.0%
Chloroethane		0.50 U	0.50 U	0.0%
Chloroform		0.50 U	0.50 U	0.0%
Chloromethane		0.50 U	0.50 U	0.0%
cis-1,2-dichloroethene		0.50 U	0.50 U	0.0%
cis-1,3-Dichloropropene		0.50 U	0.50 U	0.0%
Dibromochloromethane		0.50 U	0.50 U	0.0%
Dibromomethane		0.50 U	0.50 U	0.0%
Dichlorodifluoromethane		0.50 U	0.50 U	0.0%
Dissolved Arsenic		1.5	1.6	6.5%
Dissolved Lead		1.0 U	1.0 U	0.0%
Ethylbenzene		0.83	0.79	4.9%
Gasoline		200 U	200 U	0.0%
Hexachlorobutadiene		0.50 U	0.50 U	0.0%
Isopropylbenzene		0.50 U	0.50 U	0.0%
m+p-Xylene		1.6	1.6	1.9%
Methyl ethyl ketone (MEK)		2.5 U	2.5 U	0.0%
Methyl isobutyl ketone (MIBK)		2.5 U	2.5 U	0.0%
Methylene chloride		2.5 U	2.5 U	0.0%
methyl-t-butyl ether (MTBE)		0.50 U	0.50 U	0.0%
Naphthalene		2.0	2.0	0.5%
n-Butylbenzene		0.50 U	0.50 U	0.0%
n-Propylbenzene		0.50 U	0.50 U	0.0%
o-Xylene		1.3	1.3	3.1%
p-isopropyltoluene		0.50 U	0.50 U	0.0%
sec-Butylbenzene		0.50 U	0.50 U	0.0%

Table 2: Relative Percent Difference of Groundwater Sample Field Duplicates

Consituent	Sample Location	Primary Concentration (ug/L)	Field Duplicate Concentration (ug/L)	Relative Percent Difference
Styrene	GW-MW10	0.50 U	0.50 U	0.0%
tert-Butylbenzene		0.50 U	0.50 U	0.0%
Tetrachloroethene		0.50 U	0.50 U	0.0%
Toluene		3.1	3.4	9.3%
trans-1,2-Dichloroethene		0.50 U	0.50 U	0.0%
trans-1,3-Dichloropropene		0.50 U	0.50 U	0.0%
Trichloroethene		0.50 U	0.50 U	0.0%
Trichlorofluoromethane		0.50 U	0.50 U	0.0%
Vinyl Chloride		0.50 U	0.50 U	0.0%

Notes:

ug/L: micrograms per liter.

RPDs exceeding the allowable limit (35%) commonly used in the environmental field are shaded yellow.

Non-detect values (U) are assumed to equal the full reporting limit for the RPD calculation.

Table 3: Relative Percent Difference of Soil Gas Sample Field Duplicates

Consituent	Sample Location	Primary Concentration (ug/m^3)	Field Duplicate Concentration (ug/m^3)	Relative Percent Difference
1,1,1-Trichloroethane	SG1	22 U	21 U	4.7%
1,1,2,2-Tetrachloroethane		5.6 U	5.2 U	7.4%
1,1,2-Trichloroethane		4.5 U	4.1 U	9.3%
1,1-Dichloroethane		17 U	15 U	12.5%
1,1-Dichloroethene		16 U	15 U	6.5%
1,2,4-Trichlorobenzene		30 U	28 U	6.9%
1,2,4-Trimethylbenzene		100 U	93 U	7.3%
1,2-Dibromoethane		3.2 U	2.9 U	9.8%
1,2-Dichlorobenzene		25 U	23 U	8.3%
1,2-Dichloroethane		1.7 U	1.5 U	12.5%
1,2-Dichloropropane		9.5 U	8.8 U	7.7%
1,3,5-Trimethylbenzene		100 U	93 U	7.3%
1,3-Butadiene		0.91 U	0.84 U	8.0%
1,3-Dichlorobenzene		25 U	23 U	8.3%
1,4-Dichlorobenzene		9.9 U	9.1 U	8.4%
1,4-Dioxane		15 U	14 U	6.9%
2,2,4-Trimethylpentane		340,000 E	320,000 E	6.1%
2-Butanone		120 U	110 U	8.7%
2-Chlorotoluene		210 U	200 U	4.9%
2-Hexanone		170 U	160 U	6.1%
2-Propanol, 2-methyl-		500 U	460 U	8.3%
3-Chloropropene		64 U	59 U	8.1%
4-Ethyltoluene		100 U	93 U	7.3%
Acetone		190 U	180 U	5.4%
Acrolein		85 U	78 U	8.6%
APH EC5-8 aliphatics		3,600,000 E	3,200,000 E	11.8%
APH EC9-10 aromatics		1,000 U	950 U	5.1%
APH EC9-12 aliphatics		5,100	4,300	17.0%
Benzene		4,700 E	4,500 E	4.3%
Benzyl chloride		2.1 U	2.0 U	4.9%
Bromoform		85 U	79 U	7.3%
Bromomethane		64 U	59 U	8.1%
Butane		290,000 E	290,000 E	0.0%
Carbon disulfide		260 U	240 U	8.0%
Carbon tetrachloride		26 U	24 U	8.0%
CFC-11		92 U	85 U	7.9%
CFC-113		31 U	29 U	6.7%
CFC-12		20 U	19 U	5.1%
Chlorobenzene		19 U	17 U	11.1%
Chloroethane		110 U	100 U	9.5%
Chloroform		0.62	0.57	8.4%
Chloromethane		150 U	140 U	6.9%
cis-1,2-Dichloroethene		16 U	15 U	6.5%
cis-1,3-Dichloropropene		19 U	17 U	11.1%
Cyclohexane		310,000 E	300,000 E	3.3%
Dibromochloromethane		3.5 U	3.2 U	9.0%
Dichlorobromomethane		2.7 U	2.5 U	7.7%
Ethanol		520	500	3.9%
Ethyl acetate		300 U	270 U	10.5%
Ethylbenzene		18 U	17 U	5.7%
F-114		29 U	27 U	7.1%
Heptane		93,000 E	84,000 E	10.2%

Table 3: Relative Percent Difference of Soil Gas Sample Field Duplicates

Consituent	Sample Location	Primary Concentration (ug/m^3)	Field Duplicate Concentration (ug/m^3)	Relative Percent Difference
Hexachlorobutadiene	SG1	8.7 U	8.1 U	7.1%
Hexane		2,400,000 E	2,100,000 E	13.3%
Isopropyl alcohol		350 U	330 U	5.9%
Isopropylbenzene (Cumene)		100 U	93 U	7.3%
m, p-Xylene		36 U	33 U	8.7%
Methyl isobutyl ketone		170 U	160 U	6.1%
Methyl methacrylate		170 U	160 U	6.1%
Methyl t-butyl ether		74 U	69 U	7.0%
Methylene chloride		3,600 U	3,300 U	8.7%
Naphthalene		2.3	2.2	4.4%
Nonane		220 U	200 U	9.5%
o-Xylene		18 U	17 U	5.7%
Pentane		1,900,000 E	1,800,000 E	5.4%
Propene		1,900 E	1,900 E	0.0%
Propylbenzene		100 U	93 U	7.3%
Styrene		35 U	32 U	9.0%
Tetrachloroethene		280 U	260 U	7.4%
Tetrahydrofuran		12 U	11 U	8.7%
Toluene		770 U	720 U	6.7%
trans-1,2-Dichloroethene		16 U	15 U	6.5%
trans-1,3-Dichloropropene		19 U	17 U	11.1%
Trichloroethene		11 U	10.0 U	9.5%
Vinyl acetate		290 U	270 U	7.1%
Vinyl bromide		18 U	17 U	5.7%
Vinyl chloride		10.0 U	9.7 U	3.0%

Notes:

E: Estimated value, U: value was not-detected above the listed detection limit, ug/m^3: micrograms per cubic meter.

RPDs exceeding the allowable limit (35%) commonly used in the environmental field are shaded yellow.

Non-detect values (U) are assumed to equal the full reporting limit for the RPD calculation.

Table 4: Relative Percent Difference of Indoor Air Sample Field Duplicates

Consituent	Sample Location	Primary Concentration (ug/m^3)	Field Duplicate Concentration (ug/m^3)	Relative Percent Difference
1,1,1-Trichloroethane	IA-01	0.55 U	0.55 U	0.0%
1,1,2,2-Tetrachloroethane		0.14 U	0.14 U	0.0%
1,1,2-Trichloroethane		0.11 U	0.11 U	0.0%
1,1-Dichloroethane		0.40 U	0.40 U	0.0%
1,1-Dichloroethene		0.40 U	0.40 U	0.0%
1,2,4-Trichlorobenzene		0.74 U	0.74 U	0.0%
1,2,4-Trimethylbenzene		2.5 U	2.5 U	0.0%
1,2-Dibromoethane		0.077 U	0.077 U	0.0%
1,2-Dichlorobenzene		0.60 U	0.60 U	0.0%
1,2-Dichloroethane		0.057	0.053	7.3%
1,2-Dichloropropane		0.23 U	0.23 U	0.0%
1,3,5-Trimethylbenzene		2.5 U	2.5 U	0.0%
1,3-Butadiene		0.022 U	0.022 U	0.0%
1,3-Dichlorobenzene		0.60 U	0.60 U	0.0%
1,4-Dichlorobenzene		0.24 U	0.24 U	0.0%
1,4-Dioxane		0.36 U	0.36 U	0.0%
2,2,4-Trimethylpentane		12	11	8.7%
2-Butanone		3.0	2.9 U	3.4%
2-Chlorotoluene		5.2 U	5.2 U	0.0%
2-Hexanone		4.1 U	4.1 U	0.0%
2-Propanol, 2-methyl-		12 U	12 U	0.0%
3-Chloropropene		1.6 U	1.6 U	0.0%
4-Ethyltoluene		2.5 U	2.5 U	0.0%
Acetone		99 E	91 E	8.4%
Acrolein		2.1 U	2.1 U	0.0%
APH EC5-8 aliphatics		250	240	4.1%
APH EC9-10 aromatics		25 U	25 U	0.0%
APH EC9-12 aliphatics		610	650	6.3%
Benzene		0.70	0.71	1.4%
Benzyl chloride		0.052 U	0.052 U	0.0%
Bromoform		2.1 U	2.1 U	0.0%
Bromomethane		1.6 U	1.6 U	0.0%
Butane		10.0	11	9.5%
Carbon disulfide		6.2 U	6.2 U	0.0%
Carbon tetrachloride		0.63 U	0.63 U	0.0%
CFC-11		2.2 U	2.2 U	0.0%
CFC-113		0.77 U	0.77 U	0.0%
CFC-12		2.4	2.3	4.3%
Chlorobenzene		0.46 U	0.46 U	0.0%
Chloroethane		2.6 U	2.6 U	0.0%
Chloroform		0.17	0.17	0.0%
Chloromethane		3.7 U	3.7 U	0.0%
cis-1,2-Dichloroethene		0.40 U	0.40 U	0.0%
cis-1,3-Dichloropropene		0.45 U	0.45 U	0.0%
Cyclohexane		6.9 U	6.9 U	0.0%
Dibromochloromethane		0.085 U	0.085 U	0.0%
Dichlorobromomethane		0.067 U	0.067 U	0.0%
Ethanol		180 E	170 E	5.7%
Ethyl acetate		7.2 U	7.2 U	0.0%
Ethylbenzene		1.1	1.1	0.0%
F-114		0.70 U	0.70 U	0.0%
Heptane		7.0	6.8	2.9%

Table 4: Relative Percent Difference of Indoor Air Sample Field Duplicates

Consituent	Sample Location	Primary Concentration (ug/m^3)	Field Duplicate Concentration (ug/m^3)	Relative Percent Difference
Hexachlorobutadiene	IA-01	0.21 U	0.21 U	0.0%
Hexane		13	14	7.4%
Isopropyl alcohol		110 E	100 E	9.5%
Isopropylbenzene (Cumene)		2.5 U	2.5 U	0.0%
m, p-Xylene		4.6	4.3	6.7%
Methyl isobutyl ketone		4.1 U	4.1 U	0.0%
Methyl methacrylate		4.1 U	4.1 U	0.0%
Methyl t-butyl ether		1.8 U	1.8 U	0.0%
Methylene chloride		87 U	87 U	0.0%
Naphthalene		0.61	0.56	8.5%
Nonane		5.2 U	5.2 U	0.0%
o-Xylene		1.5	1.5	0.0%
Pentane		9.8	11	11.5%
Propene		1.2 U	1.2 U	0.0%
Propylbenzene		2.5 U	2.5 U	0.0%
Styrene		0.85 U	0.85 U	0.0%
Tetrachloroethene		6.8 U	6.8 U	0.0%
Tetrahydrofuran		0.29 U	0.29 U	0.0%
Toluene		19 U	19 U	0.0%
trans-1,2-Dichloroethene		0.40 U	0.40 U	0.0%
trans-1,3-Dichloropropene		0.45 U	0.45 U	0.0%
Trichloroethene		0.27 U	0.27 U	0.0%
Vinyl acetate		7.0 U	7.0 U	0.0%
Vinyl bromide		0.44 U	0.44 U	0.0%
Vinyl chloride		0.26 U	0.26 U	0.0%

Notes:

E: Estimated value, U: value was not-detected above the listed detection limit, ug/m^3: micrograms per cubic meter.
RPDs exceeding the allowable limit (35%) commonly used in the environmental field are shaded yellow.
Non-detect values (U) are assumed to equal the full reporting limit for the RPD calculation.

Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

May 21, 2021

Joel Hecker
Pioneer Technologies Corporation
5205 Corporate Center Ct SE, Suite C
Lacey, WA 98503

Dear Mr. Hecker:

Please find enclosed the analytical data report for the Sunset Auburn Project located in Auburn, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 5/17/21 Page: 1 of 1

Client: Pioneer Technologies Corp.
Project Manager: Joel Hecht
Address: 5205 Corporate Cntr Ct. SE
Project Name: Sunset Auburn
City: Lacey State: WA Zip: 98503
Location: 3317 Auburn Way N City, State: Auburn WA
Phone: 360-828-3739 Fax:
Collector: Joel Hecht Date of Collection: 5/17/21
Client Project # Sunset Auburn
Email: Hecherj@uspioneer.com

Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	c PAH 8270	PAH 8270	Semi Vol 8270	Field Notes
1 SO-TP5-3-5-0521	3-5	930	G	mult			X		X	Hold for all parameters							Hold for VOCs / PAHs
2 SO-TP4-2-4-0521	2-4	1015	G	mult.			X		X								
3 SO-TP3-2-4-0521	2-4	1100	G	mult			X		X								
4 SO-TP2-2-4-0521	2-4	1130	G	mult			X		X								
5 SO-TP1-2-4-0521	2-4	1230	G	mult			X		X								
6																	5-17-21 RUN SAMPLE 1 FOR Gx AND DxDx PER JOEL VIA EMAIL. STD TAT.
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17																	

Relinquished by:	Date / Time	Received by:	Date / Time
Joel Hecht	5/17/21 1435	[signature]	5/17/21 1435
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N
Cooler Temp.		°C
Sample Temp.		°C
Total Number of Containers		

Remarks:

TAT: 24HR 48HR (5-DAY)

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - Originator

Libby Environmental, Inc.

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Olympia, WA 98506
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FAX: (360) 352-4154
Email: libbyenv@gmail.com

SUNSET AUBURN PROJECT
Pioneer Technologies Corp.
Auburn, Washington
Libby Project # L210517-2

Gasoline by NWTPH-Gx in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)
Method Blank	5/18/2021	96	nd
SO-TP5-3-5-0521	5/18/2021	94	nd
SO-TP5-3-5-0521 Dup	5/18/2021	95	nd
SO-TP4-2-4-0521	5/18/2021	99	50
SO-TP3-2-4-0521	5/18/2021	100	64
SO-TP2-2-4-0501	5/18/2021	97	13
SO-TP1-2-4-0521	5/18/2021	100	30
Practical Quantitation Limit			10

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Toluene-d8): 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

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Olympia, WA 98506
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Email: libbyenv@gmail.com

SUNSET AUBURN PROJECT
Pioneer Technologies Corp.
Auburn, Washington
Libby Project # L210517-2

Diesel & Oil by NWTPH-Dx/Dx Extended in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	5/18/2021	93	nd	nd
SO-TP5-3-5-0521	5/18/2021	100	nd	nd
SO-TP5-3-5-0521 Dup	5/18/2021	94	nd	nd
SO-TP4-2-4-0521	5/18/2021	114	nd	nd
SO-TP3-2-4-0521	5/18/2021	116	nd	nd
SO-TP2-2-4-0501	5/18/2021	100	nd	nd
SO-TP1-2-4-0521	5/18/2021	98	nd	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Jodie Childress

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

SUNSET AUBURN PROJECT
Pioneer Technologies Corp.
Libby Project # L210517-2
Date Received 5/17/2021
Time Received 2:35 PM

Received By KD

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody complete?	☑ Yes	☐ No	
2. How was the sample delivered?	☑ Hand Delivered	☐ Picked Up	☐ Shipped

Log In

3. Cooler or Shipping Container is present.	☑ Yes	☐ No	☐ N/A
4. Cooler or Shipping Container is in good condition.	☑ Yes	☐ No	☐ N/A
5. Cooler or Shipping Container has Custody Seals present.	☐ Yes	☑ No	☐ N/A
6. Was an attempt made to cool the samples?	☑ Yes	☐ No	☐ N/A
7. Temperature of cooler (0°C to 8°C recommended)	-3.0 °C		
8. Temperature of sample(s) (0°C to 8°C recommended)	5.9 °C		
9. Did all containers arrive in good condition (unbroken)?	☑ Yes	☐ No	
10. Is it clear what analyses were requested?	☑ Yes	☐ No	
11. Did container labels match Chain of Custody?	☑ Yes	☐ No	
12. Are matrices correctly identified on Chain of Custody?	☑ Yes	☐ No	
13. Are correct containers used for the analysis indicated?	☑ Yes	☐ No	
14. Is there sufficient sample volume for indicated analysis?	☑ Yes	☐ No	
15. Were all containers properly preserved per each analysis?	☑ Yes	☐ No	
16. Were VOA vials collected correctly (no headspace)?	☑ Yes	☐ No	☐ N/A
17. Were all holding times able to be met?	☑ Yes	☐ No	

Discrepancies/ Notes

18. Was client notified of all discrepancies? ☐ Yes ☐ No ☑ N/A

Person Notified: _____ Date: _____

By Whom: _____ Via: _____

Regarding: _____

19. Comments. _____

Libby Environmental, Inc.
3322 South Bay Road NE • Olympia, WA 98506-2957

May 25, 2021

Joel Hecker
Pioneer Technologies Corporation
5205 Corporate Center Ct SE, Suite C
Lacey, WA 98503

Dear Mr. Hecker:

Please find enclosed the analytical data report for the Sunset Auburn Project located in Auburn, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 5/17/21 Page: 1 of 1

Client: Pioneer Technologies Corp.
Project Manager: Joel Hecht
Address: 5205 Corporate Cent Ct. SE
Project Name: Sunset Auburn
City: Lacey State: WA Zip: 98503
Location: 3317 Auburn Way N City, State: Auburn WA
Phone: 360-828-7799 Fax:
Collector: Joel Hecht Date of Collection: 5/17/21
Client Project # Sunset Auburn
Email: Hecker@uspioneer.com

Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	c PAH 8270	PAH 8270	Semi Vol 8270	MTCA VOC	Field Notes
1 SO-TP5-3-5-0521	3-5	930	G	mult			X			X	Hold for all parameters							Hold for VOCs/PAHs
2 SO-TP4-2-4-0521	2-4	1015	G	mult.			X			X						X		
3 SO-TP3-2-4-0521	2-4	1100	G	mult			X			X						X		
4 SO-TP2-2-4-0521	2-4	1130	G	mult			X			X								
5 SO-TP1-2-4-0521	2-4	1230	G	mult			X			X						X		
6																		5-17-21 RUN SAMPLE
7																		2 FOR Gx AND DxDx
8																		PER JOEL VIA EMAIL.
9																		STD TAT.
10																		
11																		5/21/21 MTCA VOC
12																		added via email
13																		Std TAT
14																		
15																		
16																		
17																		

Relinquished by:	Date / Time	Received by:	Date / Time
[signature]	5/17/21 1435	[signature]	5/17/21 1435
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N
Cooler Temp.		°C
Sample Temp.		°C
Total Number of Containers		

Remarks:

TAT: 24HR 48HR (5-DAY)

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - Originator

Libby Environmental, Inc.

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FAX: (360) 352-4154
Email: libbyenv@gmail.com

SUNSET AUBURN PROJECT
Pioneer Technologies Corp.
Auburn, Washington
Libby Project # L210517-2B

Volatile Organic Compounds by EPA Method 8260D in Soil

Sample Description		Method Blank	SO-TP4-2-4-0521	SO-TP3-2-4-0521	SO-TP1-2-4-0521	SO-TP1-2-4-0521
Date Sampled		N/A	5/17/2021	5/17/2021	5/17/2021	5/17/2021
Date Analyzed	PQL	5/24/2021	5/24/2021	5/24/2021	5/24/2021	5/24/2021
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	nd	nd	nd	nd
Toluene	0.10	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd
Total Xylenes	0.15	nd	nd	nd	nd	nd
1,2-Dichloroethane (EDC)	0.03	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.005	nd	nd	nd	nd	nd
Naphthalene	0.15	nd	nd	nd	nd	nd
1-Methylnaphthalene	0.40	nd	nd	nd	nd	nd
2-Methylnaphthalene	0.40	nd	nd	nd	nd	nd
Methyl *tert*- Butyl Ether (MTBE)	0.05	nd	nd	nd	nd	nd
Surrogate Recovery						
Dibromofluoromethane		115	104	112	112	112
1,2-Dichloroethane-d4		133	110	128	133	124
Toluene-d8		91	100	100	91	97
4-Bromofluorobenzene		102	95	103	108	98

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

* ANALYZED BY SIM
ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

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Olympia, WA 98506
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Email: libbyenv@gmail.com

SUNSET AUBURN PROJECT
Pioneer Technologies Corp.
Auburn, Washington
Libby Project # L210517-2B

QA/QC for Volatile Organic Compounds by EPA Method 8260D in Water

Matrix Spike Sample Identification: SO-TP1-2-4-0521

Date Analyzed: 5/24/2021

	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Methyl *tert*- Butyl Ether (MTBE)	0.25	0.25	0.33	100	132	27.6	65-135	
Benzene	0.25	0.20	0.24	80	96	18.2	65-135	
1,2-Dichloroethane (EDC)	0.25	0.27	0.35	108	140	25.8	65-135	S
Toluene	0.25	0.19	0.23	76	92	19.0	65-135	
1,2-Dibromoethane (EDB)	0.25	0.17	0.24	68	96	34.1	65-135	
Ethylbenzene	0.25	0.19	0.25	76	100	27.3	65-135	
Total Xylenes	0.75	0.56	0.73	75	97	26.4	65-135	
Naphthalene	0.25	0.16	0.20	64	80	22.2	65-135	S
1-Methylnaphthalene	0.50	0.44	0.70	88	140	45.6	65-135	R, S
2-Methylnaphthalene	0.50	0.41	0.62	82	124	40.8	65-135	R

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	112	107	65-135
1,2-Dichloroethane-d4	134	133	65-135
Toluene-d8	91	88	65-135
4-Bromofluorobenzene	107	101	65-135

ACCEPTABLE RPD IS 35%

"S" Spike compound recovery is outside acceptance limits.
"R" High relative percent difference observed.

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

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Olympia, WA 98506
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FAX: (360) 352-4154
Email: libbyenv@gmail.com

SUNSET AUBURN PROJECT
Pioneer Technologies Corp.
Auburn, Washington
Libby Project # L210517-2B

Laboratory Control Sample

	Spiked Conc. (µg/L)	LCS Response (µg/L)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Methyl *tert*- Butyl Ether (MTBE)	0.25	0.24	96	80-120	
Benzene	0.25	0.22	88	80-120	
1,2-Dichloroethane (EDC)	0.25	0.28	112	80-120	
Toluene	0.25	0.22	88	80-120	
1,2-Dibromoethane (EDB)	0.25	0.21	84	80-120	
Ethylbenzene	0.25	0.25	100	80-120	
Total Xylenes	0.75	0.78	104	80-120	
Naphthalene	0.25	0.30	120	80-120	
1-Methylnaphthalene	0.5	0.58	116	80-120	
2-Methylnaphthalene	0.5	0.60	120	80-120	
Surrogate Recovery					
Dibromofluoromethane			104	65-135	
1,2-Dichloroethane-d4			112	65-135	
Toluene-d8			89	65-135	
4-Bromofluorobenzene			109	65-135	

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

SUNSET AUBURN PROJECT
Pioneer Technologies Corp.
Libby Project # L210517-2B
Date Received 5/17/2021
Time Received 2:35 PM

Received By KD

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody complete?	☑ Yes	☐ No	
2. How was the sample delivered?	☑ Hand Delivered	☐ Picked Up	☐ Shipped

Log In

3. Cooler or Shipping Container is present.	☑ Yes	☐ No	☐ N/A
4. Cooler or Shipping Container is in good condition.	☑ Yes	☐ No	☐ N/A
5. Cooler or Shipping Container has Custody Seals present.	☐ Yes	☑ No	☐ N/A
6. Was an attempt made to cool the samples?	☑ Yes	☐ No	☐ N/A
7. Temperature of cooler (0°C to 8°C recommended)	-3.0 °C		
8. Temperature of sample(s) (0°C to 8°C recommended)	5.9 °C		
9. Did all containers arrive in good condition (unbroken)?	☑ Yes	☐ No	
10. Is it clear what analyses were requested?	☑ Yes	☐ No	
11. Did container labels match Chain of Custody?	☑ Yes	☐ No	
12. Are matrices correctly identified on Chain of Custody?	☑ Yes	☐ No	
13. Are correct containers used for the analysis indicated?	☑ Yes	☐ No	
14. Is there sufficient sample volume for indicated analysis?	☑ Yes	☐ No	
15. Were all containers properly preserved per each analysis?	☑ Yes	☐ No	
16. Were VOA vials collected correctly (no headspace)?	☑ Yes	☐ No	☐ N/A
17. Were all holding times able to be met?	☑ Yes	☐ No	

Discrepancies/ Notes

18. Was client notified of all discrepancies? ☐ Yes ☐ No ☑ N/A

Person Notified: _____ Date: _____

By Whom: _____ Via: _____

Regarding: _____

19. Comments. _____

Libby Environmental, Inc.
3322 South Bay Road NE • Olympia, WA 98506-2957

June 14, 2022

Joel Hecker
Pioneer Technologies Corporation
5205 Corporate Center Ct SE, Suite C
Lacey, WA 98503

Dear Mr. Hecker:

Please find enclosed the analytical data report for the Sunset Auto PDI Project located in Auburn, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Chain of Custody Record

www.LibbyEnvironmental.com

Date: 6/8/22 Page: 1 of 3

Client: Pioneer Technologies Corp.
Project Manager: Joel Hecker
Address: 5205 Corporate Center Ct. SE
Project Name: Sunset Auto PDI
City: Lacey State: WA Zip: 98503
Location: 3317 Auburn Way N City, State: Auburn, WA
Phone: 360-570-1700 Fax:
Collector: JH Date of Collection: 6/7/22
Client Project # Sunset Auto PDI (SA) on bottles
Email: Hecker j@ uspioneer.com

Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	cPAH 8270	PAH 8270	Semi Vol 8270	Naphthalene	Field Notes
1 SO-B46-1-2	1-2	1300	G	mint			X	X								X		
2 SO-B46-6-7	6-7	1305																
3 SO-B46-10-11	10-11	1310																
4 SO-B46-14-15	14-15	1315																
5 SO-B47-2-3	2-3	1345																
6 SO-B47 6-7	6-7	1350																
7 SO-B47-11-12	11-12	1355																
8 SO-B48-2-3	2-3	1500																
9 SO-B48-6-7	6-7	1505																
10 SO-B48-9-10	9-10	1510																Run Dup on this
11 SO-B48-11.5-12	11.5-12	1515																
12 SO-B49-2-3	2-3	1220																
13 SO-B49-6-7	6-7	1225																
14 SO-B49-10-11	10-11	1230																
15 SO-B49-14-15	14-15	1235																
16 SO-B50-2-3	2-3	1140																
17 SO-B50-5-6	5-6	1145																

Relinquished by:	Date / Time	Received by:	Date / Time
JH UPS	6/8/22	[signature] CMT	6-8-22 0824
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N
Cooler Temp.		°C
Sample Temp.		°C
Total Number of Containers		

Remarks:

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - Originator

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Chain of Custody Record

www.LibbyEnvironmental.com

Date: 6/8/22 Page: 2 of 3

Client: Pioneer
Project Manager: Joey Hecker
Address:
Project Name:
City: State: Zip:
Location: City, State:
Phone: Fax:
Collector: Date of Collection: 6/7/22
Client Project # Sunset Auto PDI
Email:

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	c PAH 8270	PAH 8270	Semi Vol 8270	Naphthalene		Field Notes
1	SO-B50-9-10	9-10	1150	G	Mult			X	X								X			
2	SO-B50-12-13	12-13	1155																	
3	SO-B51-1-2	1-2	815																	
4	SO-B51-4-5	4-5	820																	
5	SO-B51-7-8	7-8	825																	Run Dup on this
6	SO-B01-12-13	12-13	830																	
7	SO-B52-1-2	1-2	950																	
8	SO-B52-5-6	5-6	955																	
9	SO-B52-7-8	7-8	1000																	Run Dup on this
10	SO-B52-11-12	11-12	1005																	Run MS/MSD w/ this
11	SO-B53-2-3	2-3	0730																	
12	SO-B53-4-5	4-5	735																	
13	SO-B53-7-8	7-8	740																	
14	SO-B53-10-11	10-11	745																	
15	SO-B54-2-3	2-3	850																	
16	SO-B54-5-6	5-6	855																	
17	SO-B54-9-10	9-10	900																	

Relinquished by:	Date / Time	Received by:	Date / Time
[signature]	6/8/22	[signature]	6-8-22 0820
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N
Cooler Temp.		°C
Sample Temp.		°C
Total Number of Containers		

Remarks:

TAT: 24HR 48HR (5-DAY)

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

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Chain of Custody Record

www.LibbyEnvironmental.com

Date: 6/8/22 Page: 3 of 3

Client: Pioneer
Project Manager: Joel Hecker
Address:
Project Name:
City: State: Zip:
Location: City, State:
Phone: Fax:
Collector: Date of Collection: 6/7/22
Client Project # Sunset Auto PDI
Email:

Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	c PAH 8270	PAH 8270	Semi Vol 8270	Naphthalene		Field Notes
1 SO-BS4-14-15	14-15	905	G	mult			X	X								X			
2 SO-BS5-1-2	1-2	920																	
3 SO-BS5-5-6	5-6	925																	
4 SO-BS5-9-10	9-10	930																	
5 SO-BS5-14-15	14-15	935																	
6 SO-BS6-2-3	2-3	1535																	
7 SO-BS6-5-6	5-6	1600																	
8 SO-BS6-8-9	8-9	1610																	
9 SO-BS6-10-11	10-11	1605																	
10 SO-BS7-1-2	1-2	1545																	
11 SO-BS7-3-4	3-4	1550					X	X								X			
12 TB-0622	—	—						X								X			
13																			
14																			
15																			
16																			
17																			

Relinquished by:	Date / Time	Received by:	Date / Time
[illegible]	6/8/22	[illegible]	6-8-22 0824
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N
Cooler Temp.		°C
Sample Temp.		°C
Total Number of Containers		

Remarks:

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

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SUNSET AUTO PDI PROJECT
Pioneer Technologies Corp.
Auburn, Washington
Libby Project # L22F042

Analyses of Gasoline (NWTPH-Gx) & BTEX/Naphthalenes (EPA Method 8260D) in Soil

Sample Description		Method Blank	SO-B46-1-2	SO-B46-6-7	SO-B46-10-11	SO-B46-14-15	SO-B47-2-3
Date Sampled		N/A	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022
Date Analyzed	PQL (mg/kg)	6/9/2022 (mg/kg)	6/11/2022 (mg/kg)	6/11/2022 (mg/kg)	6/11/2022 (mg/kg)	6/11/2022 (mg/kg)	6/9/2022 (mg/kg)
Benzene	0.02	nd	nd	22	32	0.58	0.26
Toluene	0.10	nd	nd	8.9	0.82	nd	nd
Ethylbenzene	0.05	nd	nd	300	330	11	0.48
Total Xylenes	0.15	nd	nd	1400	1200	46	1.3
Naphthalene	0.15	nd	nd	96	120	6.3	0.24
1-Methylnaphthalene	0.40	nd	nd	21	24	4.4	nd
2-Methylnaphthalene	0.40	nd	nd	51	58	9.2	nd
Gasoline	10	nd	nd	18000	21000	87	110
Surrogate Recovery							
Dibromofluoromethane		72	77	71	67	67	67
1,2-Dichloroethane-d4		109	102	99	105	102	83
Toluene-d8		48 S	51 S	69	69	62	109
4-Bromofluorobenzene		79	90	97	98	108	94

"nd" Indicates not detected at listed detection limit.
"S" Spike compound recovery is outside acceptance limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

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SUNSET AUTO PDI PROJECT
Pioneer Technologies Corp.
Auburn, Washington
Libby Project # L22F042

Analyses of Gasoline (NWTPH-Gx) & BTEX/Naphthalenes (EPA Method 8260D) in Soil

Sample Description		SO-B47-6-7	SO-B47-11-12	SO-B48-2-3	SO-B48-6-7	SO-B48-9-10	SO-B48-9-10 Dup
Date Sampled		6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022
Date Analyzed	PQL	6/11/2022	6/11/2022	6/11/2022	6/11/2022	6/9/2022	6/9/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	5.0	nd	nd	0.11	0.40	0.51
Toluene	0.10	0.22	nd	nd	nd	nd	nd
Ethylbenzene	0.05	33	nd	nd	nd	1.8	2.7
Total Xylenes	0.15	72	nd	nd	nd	0.67	0.94
Naphthalene	0.15	49	nd	nd	0.53	1.8	2.9
1-Methylnaphthalene	0.40	3.9	nd	nd	nd	0.73	0.86
2-Methylnaphthalene	0.40	6.3	nd	nd	0.69	0.94	2.1
Gasoline	10	4800	nd	nd	31	130	120
Surrogate Recovery							
Dibromofluoromethane		69	79	116	121	79	74
1,2-Dichloroethane-d4		106	112	158 S	170 S	88	90
Toluene-d8		60 S	47 S	87	79	112	116
4-Bromofluorobenzene		95	89	100	113	98	102

"nd" Indicates not detected at listed detection limit.
"S" Spike compound recovery is outside acceptance limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

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SUNSET AUTO PDI PROJECT
Pioneer Technologies Corp.
Auburn, Washington
Libby Project # L22F042

Analyses of Gasoline (NWTPH-Gx) & BTEX/Naphthalenes (EPA Method 8260D) in Soil

Sample Description		Method Blank	SO-B48-11.5-12	SO-B49-2-3	SO-B49-6-7	SO-B49-10-11	SO-B49-14-15
Date Sampled		N/A	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022
Date Analyzed	PQL	6/11/2022	6/9/2022	6/11/2022	6/9/2022	6/12/2022	6/11/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	0.13	0.58	1.4	0.033	0.10
Toluene	0.10	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	0.39	1.0	3.8	nd	0.071
Total Xylenes	0.15	nd	0.15	10	0.32	nd	0.20
Naphthalene	0.15	nd	1.0	nd	4.6	1.5	2.2
1-Methylnaphthalene	0.40	nd	nd	nd	2.2	nd	nd
2-Methylnaphthalene	0.40	nd	0.69	nd	4.0	nd	nd
Gasoline	10	nd	120	94	190	12	21
Surrogate Recovery							
Dibromofluoromethane		89	85	91	73	118	108
1,2-Dichloroethane-d4		134	97	98	117	165 S	154 S
Toluene-d8		52 S	114	109	101	84	70
4-Bromofluorobenzene		82	94	95	109	86	114

"nd" Indicates not detected at listed detection limit.
"S" Spike compound recovery is outside acceptance limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

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SUNSET AUTO PDI PROJECT
Pioneer Technologies Corp.
Auburn, Washington
Libby Project # L22F042

Analyses of Gasoline (NWTPH-Gx) & BTEX/Naphthalenes (EPA Method 8260D) in Soil

Sample Description		SO-B49-14-15 Dup	SO-B50-2-3	SO-B50-2-3 Dup	Method Blank	SO-B50-5-6	SO-B50-9-10
Date Sampled		6/7/2022	6/7/2022	6/7/2022	N/A	6/7/2022	6/7/2022
Date Analyzed	PQL	6/11/2022	6/9/2022	6/9/2022	6/9/2022	6/9/2022	6/11/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	0.055	nd	nd	nd	nd	nd
Toluene	0.10	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	0.062	nd	nd	nd	nd	nd
Total Xylenes	0.15	0.17	nd	nd	nd	nd	nd
Naphthalene	0.15	2.2	nd	nd	nd	nd	nd
1-Methylnaphthalene	0.40	nd	nd	nd	nd	nd	nd
2-Methylnaphthalene	0.40	nd	nd	nd	nd	nd	nd
Gasoline	10	24	nd	12	nd	11	nd
Surrogate Recovery							
Dibromofluoromethane		67	118	93	73	87	123
1,2-Dichloroethane-d4		110	150 S	99	112	113	166 S
Toluene-d8		52 S	91	101	48 S	81	82
4-Bromofluorobenzene		96	92	96	81	89	96

"nd" Indicates not detected at listed detection limit.
"S" Spike compound recovery is outside acceptance limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

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SUNSET AUTO PDI PROJECT
Pioneer Technologies Corp.
Auburn, Washington
Libby Project # L22F042

Analyses of Gasoline (NWTPH-Gx) & BTEX/Naphthalenes (EPA Method 8260D) in Soil

Sample Description		SO-B50-12-13	SO-B51-1-2	SO-B51-4-5	SO-B51-7-8	SO-B51-7-8 Dup	SO-B51-12-13
Date Sampled		6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022
Date Analyzed	PQL	6/10/2022	6/10/2022	6/11/2022	6/10/2022	6/10/2022	6/12/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	nd	1.7	0.35	0.27	nd
Toluene	0.10	nd	nd	14.3	0.49	nd	nd
Ethylbenzene	0.05	nd	nd	130	27	24	nd
Total Xylenes	0.15	nd	nd	670	9.2	5.0	nd
Naphthalene	0.15	nd	nd	120	13	12	nd
1-Methylnaphthalene	0.40	nd	nd	110	4.6	20	nd
2-Methylnaphthalene	0.40	nd	nd	160	6.9	31	nd
Gasoline	10	nd	nd	31000 E	1500	1870	nd
Surrogate Recovery							
Dibromofluoromethane		80	77	97	63 S	64 S	72
1,2-Dichloroethane-d4		112	114	100	101	101	104
Toluene-d8		52 S	56 S	129	65	66	58 S
4-Bromofluorobenzene		93	88	107	102	102	82

"nd" Indicates not detected at listed detection limit.
"E" Reported result is an estimate because it exceeds the calibration range.
"S" Spike compound recovery is outside acceptance limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

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SUNSET AUTO PDI PROJECT
Pioneer Technologies Corp.
Auburn, Washington
Libby Project # L22F042

Analyses of Gasoline (NWTPH-Gx) & BTEX/Naphthalenes (EPA Method 8260D) in Soil

Sample Description		SO-B52-1-2	SO-B52-5-6	SO-B52-7-8	SO-B52-7-8 Dup	SO-B52-11-12	SO-B52-11-12 Dup
Date Sampled		6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022
Date Analyzed	PQL	6/12/2022	6/10/2022	6/10/2022	6/12/2022	6/12/2022	6/12/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	0.14	0.29	0.34	nd	nd
Toluene	0.10	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	0.24	12	14	nd	nd
Total Xylenes	0.15	nd	nd	nd	nd	nd	nd
Naphthalene	0.15	nd	0.50	9.3	9.8	nd	nd
1-Methylnaphthalene	0.40	nd	nd	4.1	2.8	nd	nd
2-Methylnaphthalene	0.40	nd	nd	8.6	6.3	nd	nd
Gasoline	10	nd	750	1500	1400	nd	nd
Surrogate Recovery							
Dibromofluoromethane		106	68	75	109	75	111
1,2-Dichloroethane-d4		108	105	109	116	111	170 S
Toluene-d8		98	115	110	115	54 S	80
4-Bromofluorobenzene		96	120	118	99	78	79

"nd" Indicates not detected at listed detection limit.
"S" Spike compound recovery is outside acceptance limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

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SUNSET AUTO PDI PROJECT
Pioneer Technologies Corp.
Auburn, Washington
Libby Project # L22F042

Analyses of Gasoline (NWTPH-Gx) & BTEX/Naphthalenes (EPA Method 8260D) in Soil

Sample Description		SO-B53-2-3	SO-B53-4-5	SO-B53-7-8	SO-B53-10-11	SO-B54-2-3	SO-B54-5-6
Date Sampled		6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022
Date Analyzed	PQL	6/12/2022	6/12/2022	6/10/2022	6/10/2022	6/10/2022	6/12/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	0.32	0.10	0.44	nd	nd	33
Toluene	0.10	nd	nd	nd	nd	nd	47
Ethylbenzene	0.05	0.68	nd	19	nd	nd	130
Total Xylenes	0.15	1.7	nd	29	nd	nd	800
Naphthalene	0.15	0.33	nd	9.6	nd	nd	52
1-Methylnaphthalene	0.40	nd	nd	4.1	nd	nd	26
2-Methylnaphthalene	0.40	nd	nd	8.3	nd	nd	42
Gasoline	10	100	nd	1400	nd	44	10000
Surrogate Recovery							
Dibromofluoromethane		91	75	70	68	81	98
1,2-Dichloroethane-d4		141 S	114	84	104	104	109
Toluene-d8		96	58 S	104	79	88	115
4-Bromofluorobenzene		97	89	108	93	117	104

"nd" Indicates not detected at listed detection limit.
"S" Spike compound recovery is outside acceptance limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

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SUNSET AUTO PDI PROJECT
Pioneer Technologies Corp.
Auburn, Washington
Libby Project # L22F042

Analyses of Gasoline (NWTPH-Gx) & BTEX/Naphthalenes (EPA Method 8260D) in Soil

Sample Description		SO-B54-9-10	SO-B54-14-15	SO-B55-1-2	SO-B55-1-2 Dup	SO-B55-5-6	SO-B55-9-10
Date Sampled		6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022
Date Analyzed	PQL	6/10/2022	6/12/2022	6/10/2022	6/10/2022	6/10/2022	6/10/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	20	0.37	nd	nd	23	13
Toluene	0.10	8.2	nd	nd	nd	120	5.9
Ethylbenzene	0.05	11	nd	nd	nd	120	200
Total Xylenes	0.15	580 E	nd	nd	nd	650	1000
Naphthalene	0.15	48	nd	nd	nd	55	86
1-Methylnaphthalene	0.40	15	nd	nd	nd	570	87
2-Methylnaphthalene	0.40	35	nd	nd	nd	860	110
Gasoline	10	9300 E	nd	nd	nd	17000	27000 E
Surrogate Recovery							
Dibromofluoromethane		68	74	82	76	56 S	69
1,2-Dichloroethane-d4		108	109	124	115	76	83
Toluene-d8		84	52 S	110	76	92	111
4-Bromofluorobenzene		101	85	95	89	106	104

"nd" Indicates not detected at listed detection limit.
"E" Reported value is above the calibration range and is an estimate.
"S" Spike compound recovery is outside acceptance limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

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SUNSET AUTO PDI PROJECT
Pioneer Technologies Corp.
Auburn, Washington
Libby Project # L22F042

Analyses of Gasoline (NWTPH-Gx) & BTEX/Naphthalenes (EPA Method 8260D) in Soil

Sample Description		SO-B55-14-15	SO-B56-2-3	SO-B56-5-6	SO-B56-8-9	SO-B56-10-11	SO-B56-10-11 Dup
Date Sampled		6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022
Date Analyzed	PQL	6/10/2022	6/10/2022	6/12/2022	6/10/2022	6/10/2022	6/10/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	0.27	0.11	15	2.2	0.030	0.022
Toluene	0.10	0.13	nd	nd	nd	nd	nd
Ethylbenzene	0.05	4.0	0.16	7.6	6.4	nd	nd
Total Xylenes	0.15	20	nd	0.37	1.9	nd	nd
Naphthalene	0.15	1.6	nd	7.7	1.5	nd	nd
1-Methylnaphthalene	0.40	0.95	nd	29	9.5	nd	nd
2-Methylnaphthalene	0.40	1.8	nd	52	18	nd	nd
Gasoline	10	1500	16	1600	560	10	nd
Surrogate Recovery							
Dibromofluoromethane		69	89	100	68	66	89
1,2-Dichloroethane-d4		91	96	109	111	85	115
Toluene-d8		135	102	90	130	90	112
4-Bromofluorobenzene		107	95	96	113	88	109

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

Libby Environmental, Inc.

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SUNSET AUTO PDI PROJECT
Pioneer Technologies Corp.
Auburn, Washington
Libby Project # L22F042

Analyses of Gasoline (NWTPH-Gx) & BTEX/Naphthalenes (EPA Method 8260D) in Soil

Sample Description		Method Blank	SO-B57-1-2	SO-B57-3-4	Method Blank
Date Sampled		N/A	6/7/2022	6/7/2022	N/A
Date Analyzed	PQL (mg/kg)	6/10/2022 (mg/kg)	6/12/2022 (mg/kg)	6/12/2022 (mg/kg)	6/12/2022 (mg/kg)
Benzene	0.02	nd	nd	0.060	nd
Toluene	0.10	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	0.48	nd
Total Xylenes	0.15	nd	nd	0.50	nd
Naphthalene	0.15	nd	nd	1.1	nd
1-Methylnaphthalene	0.40	nd	nd	3.2	nd
2-Methylnaphthalene	0.40	nd	nd	6.2	nd
Gasoline	10	nd	nd	3900	nd
Surrogate Recovery					
Dibromofluoromethane		72	72	71	73
1,2-Dichloroethane-d4		115	115	109	112
Toluene-d8		60 S	53 S	73	51 S
4-Bromofluorobenzene		75	88	104	78

"nd" Indicates not detected at listed detection limit.
"S" Spike compound recovery is outside acceptance limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

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Libby Project # L22F042

QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Matrix Spike Sample Identification: SO-B48-9-10
Date Analyzed: 6/9/2022

	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Benzene	0.25	0.29	0.33	115	133	14.5	65-135	
Toluene	0.25	0.26	0.27	102	106	3.8	65-135	
Ethylbenzene	0.25	0.34	0.39	136	156	13.7	65-135	A
Total Xylenes	0.75	0.93	0.95	123	126	2.1	65-135	
Naphthalene	0.25	0.0	0.54	0	214	200	65-135	A, R
1-Methylnaphthalene	0.25	0.0	0.00	0	0	0.0	65-135	A, R
2-Methylnaphthalene	0.25	0.70	0.00	280	0	200	65-135	A, R

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	75	78	65-135
1,2-Dichloroethane-d4	89	94	65-135
Toluene-d8	107	105	65-135
4-Bromofluorobenzene	97	94	65-135

ACCEPTABLE RPD IS 35%
"A" Due to high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
"R" High relative percent difference observed.

ANALYSES PERFORMED BY: Sherry Chilcutt

Laboratory Control Sample

Date Analyzed: 6/9/2022

	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	0.25	0.29	114	80-120	
Toluene	0.25	0.21	85	80-120	
Ethylbenzene	0.25	0.28	111	80-120	
Total Xylenes	0.75	0.80	106	80-120	
Naphthalene	0.25	0.22	90	80-120	
1-Methylnaphthalene	0.25	0.22	90	80-120	
2-Methylnaphthalene	0.25	0.25	101	80-120	

Surrogate Recovery			
Dibromofluoromethane	74	65-135	
1,2-Dichloroethane-d4	112	65-135	
Toluene-d8	54 S	65-135	
4-Bromofluorobenzene	100	65-135	

"S" Spike compound recovery is outside acceptance limits.

ANALYSES PERFORMED BY: Sherry Chilcutt

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QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Matrix Spike Sample Identification: SO-B52-7-8
Date Analyzed: 6/10/2022

	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Benzene	0.25	0.23	0.24	90	94	4.3	65-135	
Toluene	0.25	0.24	0.25	94	100	6.2	65-135	
Ethylbenzene	0.25	0.03	0.25	12	98	156	65-135	A, R
Total Xylenes	0.75	0.75	0.81	100	107	7.1	65-135	
Naphthalene	0.25	0.00	0.00	0	0	0.0	65-135	A
1-Methylnaphthalene	0.25	0.00	0.00	0	0	0.0	65-135	A
2-Methylnaphthalene	0.25	0.00	0.00	0	0	0.0	65-135	A

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	72	67	65-135
1,2-Dichloroethane-d4	101	108	65-135
Toluene-d8	112	131	65-135
4-Bromofluorobenzene	116	114	65-135

ACCEPTABLE RPD IS 35%
"A" Due to high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
"R" High relative percent difference observed.

ANALYSES PERFORMED BY: Sherry Chilcutt

Laboratory Control Sample

Date Analyzed: 6/9/2022

	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	0.25	0.30	120	80-120	
Toluene	0.25	0.20	82	80-120	
Ethylbenzene	0.25	0.29	116	80-120	
Total Xylenes	0.75	0.82	110	80-120	
Naphthalene	0.25	0.23	90	80-120	
1-Methylnaphthalene	0.25	0.29	116	80-120	
2-Methylnaphthalene	0.25	0.21	83	80-120	

Surrogate Recovery			
Dibromofluoromethane	85	65-135	
1,2-Dichloroethane-d4	132	65-135	
Toluene-d8	69	65-135	
4-Bromofluorobenzene	117	65-135	

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QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Matrix Spike Sample Identification: SO-B55-1-2
Date Analyzed: 6/10/2022

	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Benzene	0.25	0.27	0.23	107	92	15.3	65-135	
Toluene	0.25	0.16	0.19	66	77	15.7	65-135	
Ethylbenzene	0.25	0.24	0.20	98	81	18.8	65-135	
Total Xylenes	0.75	0.69	0.59	92	78	16.5	65-135	
Naphthalene	0.25	0.23	0.19	92	76	19.5	65-135	
1-Methylnaphthalene	0.25	0.24	0.22	94	86	8.4	65-135	
2-Methylnaphthalene	0.25	0.20	0.19	78	76	3.1	65-135	

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	74	77	65-135
1,2-Dichloroethane-d4	116	127	65-135
Toluene-d8	69	65	65-135
4-Bromofluorobenzene	116	110	65-135

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Sherry Chilcutt

Laboratory Control Sample

Date Analyzed: 6/10/2022

	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	0.25	0.28	112	80-120	
Toluene	0.25	0.21	82	80-120	
Ethylbenzene	0.25	0.29	115	80-120	
Total Xylenes	0.75	0.83	111	80-120	
Naphthalene	0.25	0.25	100	80-120	
1-Methylnaphthalene	0.25	0.22	87	80-120	
2-Methylnaphthalene	0.25	0.20	80	80-120	

Surrogate Recovery			
Dibromofluoromethane	65	65-135	
1,2-Dichloroethane-d4	91	65-135	
Toluene-d8	64 S	65-135	
4-Bromofluorobenzene	101	65-135	

"S" Spike compound recovery is outside acceptance limits.

ANALYSES PERFORMED BY: Sherry Chilcutt

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Libby Project # L22F042

QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Matrix Spike Sample Identification: SO-B49-14-15
Date Analyzed: 6/11/2022

	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Benzene	0.25	0.25	0.18	100	72	32.6	65-135	
Toluene	0.25	0.18	0.14	74	56	26.5	65-135	S
Ethylbenzene	0.25	0.28	0.25	110	100	9.5	65-135	
Total Xylenes	0.75	0.91	0.78	121	104	14.8	65-135	
Naphthalene	0.25	0.41	0.12	164	48	109	65-135	A, R
1-Methylnaphthalene	0.25	0.24	0.12	97	48	68	65-135	A, R
2-Methylnaphthalene	0.25	0.20	0.13	80	50	46	65-135	A, R

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	92	78	65-135
1,2-Dichloroethane-d4	140 S	122	65-135
Toluene-d8	73	69	65-135
4-Bromofluorobenzene	117	114	65-135

ACCEPTABLE RPD IS 35%
"A" Due to high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
"R" High relative percent difference observed.
"S" Spike compound recovery is outside acceptance limits.

ANALYSES PERFORMED BY: Sherry Chilcutt

Laboratory Control Sample

Date Analyzed: 6/11/2022

	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	0.25	0.28	113	80-120	
Toluene	0.25	0.21	84	80-120	
Ethylbenzene	0.25	0.25	101	80-120	
Total Xylenes	0.75	0.78	103	80-120	
Naphthalene	0.25	0.29	116	80-120	
1-Methylnaphthalene	0.25	0.27	109	80-120	
2-Methylnaphthalene	0.25	0.22	86	80-120	

Surrogate Recovery			
Dibromofluoromethane	88	65-135	
1,2-Dichloroethane-d4	133	65-135	
Toluene-d8	61 S	65-135	
4-Bromofluorobenzene	100	65-135	

"S" Spike compound recovery is outside acceptance limits.

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Auburn, Washington
Libby Project # L22F042

QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Matrix Spike Sample Identification: SO-B52-11-12
Date Analyzed: 6/12/2022

	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Benzene	0.25	0.22	0.21	88	86	2.3	65-135	
Toluene	0.25	0.19	0.17	74	68	9.0	65-135	
Ethylbenzene	0.25	0.27	0.25	107	100	7.0	65-135	
Total Xylenes	0.75	0.79	0.78	105	103	1.9	65-135	
Naphthalene	0.25	0.31	0.19	123	77	45.6	65-135	R
1-Methylnaphthalene	0.25	0.21	0.16	85	66	25.5	65-135	
2-Methylnaphthalene	0.25	0.18	0.14	73	56	25.4	65-135	A

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	75	74	65-135
1,2-Dichloroethane-d4	112	107	65-135
Toluene-d8	56 S	80	65-135
4-Bromofluorobenzene	118	110	65-135

ACCEPTABLE RPD IS 35%
"A" Due to high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
"R" High relative percent difference observed.
"S" Spike compound recovery is outside acceptance limits.

ANALYSES PERFORMED BY: Sherry Chilcutt

Laboratory Control Sample

Date Analyzed: 6/12/2022

	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	0.25	0.24	94	80-120	
Toluene	0.25	0.22	88	80-120	
Ethylbenzene	0.25	0.24	96	80-120	
Total Xylenes	0.75	0.69	92	80-120	
Naphthalene	0.25	0.21	86	80-120	
1-Methylnaphthalene	0.25	0.22	87	80-120	
2-Methylnaphthalene	0.25	0.21	82	80-120	

Surrogate Recovery			
Dibromofluoromethane	85	65-135	
1,2-Dichloroethane-d4	129	65-135	
Toluene-d8	63 S	65-135	
4-Bromofluorobenzene	116	65-135	

"S" Spike compound recovery is outside acceptance limits.

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Pioneer Technologies Corp.
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Libby Project # L22F042

Analyses of BTEX/Naphthalenes (EPA Method 8260D) in Water

Sample Description		Method Blank	TB-0622	TB-0622 Dup
Date Sampled		N/A	6/7/2022	6/7/2022
Date Analyzed	PQL (µg/L)	6/13/2022 (µg/L)	6/13/2022 (µg/L)	6/13/2022 (µg/L)
Benzene	1.0	nd	nd	nd
Toluene	2.0	nd	nd	nd
Ethylbenzene	1.0	nd	nd	nd
Total Xylenes	2.0	nd	nd	nd
Naphthalene	5.0	nd	nd	nd
1-Methylnaphthalene	5.0	nd	nd	nd
2-Methylnaphthalene	5.0	nd	nd	nd
Surrogate Recovery				
Dibromofluoromethane		79	79	91
1,2-Dichloroethane-d4		115	123	132
Toluene-d8		49 S	49 S	54 S
4-Bromofluorobenzene		85	82	86

"nd" Indicates not detected at listed detection limit.
"S" Spike compound recovery is outside acceptance limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

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SUNSET AUTO PDI PROJECT
Pioneer Technologies Corp.
Auburn, Washington
Libby Project # L22F042

QA/QC for BTEX/Naphthalenes (EPA Method 8260D) in Water

Matrix Spike Sample Identification: TB-0622

Date Analyzed: 6/13/2022

	Spiked Conc. (µg/L)	MS Response (µg/L)	MSD Response (µg/L)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Benzene	5.0	4.4	6.4	89	128	36.2	65-135	R
Toluene	5.0	4.6	4.2	92	84	9.1	65-135	
Ethylbenzene	5.0	4.9	4.7	98	94	4.2	65-135	
Total Xylenes	15.0	13.6	13.7	91	91	0.7	65-135	

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	142 S	129	65-135
1,2-Dichloroethane-d4	128	185 S	65-135
Toluene-d8	97	84	65-135
4-Bromofluorobenzene	121	128	65-135

ACCEPTABLE RPD IS 35%
"R" High relative percent difference observed.
"S" Spike compound recovery is outside acceptance limits.

ANALYSES PERFORMED BY: Sherry Chilcutt

Laboratory Control Sample

Date Analyzed: 6/13/2022

	Spiked Conc. (µg/L)	LCS Response (µg/L)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	5.0	4.3	87	80-120	
Toluene	5.0	5.1	102	80-120	
Ethylbenzene	5.0	4.9	98	80-120	
Total Xylenes	15.0	14.2	95	80-120	

Surrogate Recovery			
Dibromofluoromethane	81	65-135	
1,2-Dichloroethane-d4	120	65-135	
Toluene-d8	52 S	65-135	
4-Bromofluorobenzene	119	65-135	

"S" Spike compound recovery is outside acceptance limits.

ANALYSES PERFORMED BY: Sherry Chilcutt

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SUNSET AUTO PDI PROJECT
Pioneer Technologies Corp.
Libby Project # L22F042
Date Received 6/8/22 8:23

Received By SC

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody complete?	☑ Yes	☐ No	
2. How was the sample delivered?	☑ Hand Delivered	☐ Picked Up	☐ Shipped

Log In

3. Cooler or Shipping Container is present.	☑ Yes	☐ No	☐ N/A
4. Cooler or Shipping Container is in good condition.	☑ Yes	☐ No	☐ N/A
5. Cooler or Shipping Container has Custody Seals present.	☐ Yes	☑ No	☐ N/A
6. Was an attempt made to cool the samples?	☑ Yes	☐ No	☐ N/A
7. Temperature of cooler (0°C to 8°C recommended)	1.2 °C		
8. Temperature of sample(s) (0°C to 8°C recommended)	2.2 °C		
9. Did all containers arrive in good condition (unbroken)?	☑ Yes	☐ No	
10. Is it clear what analyses were requested?	☑ Yes	☐ No	
11. Did container labels match Chain of Custody?	☑ Yes	☐ No	
12. Are matrices correctly identified on Chain of Custody?	☑ Yes	☐ No	
13. Are correct containers used for the analysis indicated?	☑ Yes	☐ No	
14. Is there sufficient sample volume for indicated analysis?	☑ Yes	☐ No	
15. Were all containers properly preserved per each analysis?	☑ Yes	☐ No	
16. Were VOA vials collected correctly (no headspace)?	☑ Yes	☐ No	☐ N/A
17. Were all holding times able to be met?	☑ Yes	☐ No	

Discrepancies/ Notes

18. Was client notified of all discrepancies? ☐ Yes ☐ No ☑ N/A

Person Notified: _____ Date: _____

By Whom: _____ Via: _____

Regarding: _____

19. Comments. _____

Data Quality Review

Underground Storage Tank (UST) Investigation and Pre-Design Investigation (PDI)
Former Coastal / Roempke Enterprises Site
3317, 3319, and 3401 Auburn Way North, Auburn, Washington

This document summarizes the cursory data quality review performed by PIONEER Technologies Corporation (PIONEER) for the laboratory analysis results generated during the aforementioned investigations. Precision, accuracy, representativeness, comparability, sensitivity, and completeness were assessed during the data quality review.

1. Precision

Precision was assessed via the relative percent difference (RPD) for field duplicates and matrix spike (MS)/matrix spike duplicate (MSD) pairs. The field duplicate RPDs and MS/MSD RPDs assess the reproducibility of the field sampling methods and analytical methods, respectively. The RPDs for the soil field duplicates are presented in Table 1. An RPD expectation of 50% was used to assess soil field duplicate results, consistent with the industry standard. MS/MSD RPDs were evaluated based on control limits established and updated by the laboratory based on its historical operations. The MS/MSD RPD values and control limits are presented in the laboratory reports. A discussion of the precision during each investigation is provided below.

<u>May 2021 UST Investigation</u>

The field duplicate RPDs for the samples collected from TP1 (2-4) and TP5 (3-5) were within the project precision limits of 50%. None of the target constituents were detected above laboratory reporting limits (RLs).

The MS/MSD RPDs for the sample collected from TP1 (2-4) were within the acceptable ranges, with the exception of 1-methylnaphthalene and 2-methylnaphthalene, which both exceeded the laboratory's acceptable range of 35% for MS/MSD RPDs. The method was identified by the laboratory to be in control (e.g., acceptable range of precision) based on the laboratory control sample (LCS)/LCS duplicate (LCSD) results. The MS/MSD RPDs outside of the acceptable range were likely a result of heterogeneity in the sample matrix. Thus, further data qualification beyond what was reported by the laboratory was not necessary.

<u>June 2022 PDI</u>

The RPDs for all analytes in the field duplicate samples collected from B48 (9-10), B49 (14-15), B50 (2-3), B51 (7-8), B52 (7-8), B52 (11-12), B55 (1-2), and B56 (10-11) were within the project precision limits of 50%, with the exception of six results (see Table 1). The RPDs for these six exceptions ranged from 58% to 132%. Although the RPD indicates a lack of agreement between sample results for these select results, both duplicate results had constituent concentrations that were either less than applicable screening levels (SLs) or greater than applicable SLs. There were no duplicate sample results where one result was less than applicable SLs and one result was greater than applicable SLs.

All MS/MSD RPDs were within control limits, except for naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene in the B48 (9-10) sample, ethylbenzene in the B52 (7-8) sample, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene in the B49 (14-15) sample, naphthalene in the B52 (11-12) sample, and benzene in the trip blank sample. The methods were identified by the laboratory to be in control (e.g., acceptable range of precision) based on the LCS/LCSD results. In addition, the laboratory reported for the aforementioned MS/MSD results in the B48 (9-10) sample, B52 (7-8) sample, and B48 (14-15 sample) that "due to high sample concentration, the amount spiked is

insufficient for meaningful MS/MSD recovery data", which would also affect RPD results. The MS/MSD RPDs outside of the acceptable range were likely a result of the high sample concentrations and/or heterogeneity in the sample matrix. Thus, further data qualification beyond what was reported by the laboratory was not necessary.

2. Accuracy

Accuracy was assessed by analysis of volatile organic compound (VOC) trip blanks and laboratory method blanks as well as recoveries in LCS/LCSDs, MS/MSDs, and surrogates. Recoveries were evaluated based on control limits established and updated by the laboratory based on its historical operations. Trip blank and laboratory method blank results, and LCS/LCSD, MS/MSD, and surrogate recoveries and control limits are presented in the laboratory reports.

Trip Blanks

Trip blanks are used to assess potential background VOC contamination during transport of the sampling cooler. No VOCs were measured at concentrations greater than laboratory RLs in the PDI VOC trip blank. A VOC trip blank was not collected for the UST investigation.

Method Blanks

Method blanks were performed for each constituent and analyzed daily to assess the effect of the laboratory environment on the analytical results. No constituents were detected in the analyzed method blanks during either investigation.

Laboratory Control Samples and Laboratory Control Sample Duplicates

The LCS and LCSD is a sample matrix, free from constituents, spiked with verified known amounts of constituents or a material containing known and verified amounts of constituents. It is generally used to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. No exceptions were noted during either investigation.

Matrix Spike and Matrix Spike Duplicates

The MS and MSD percent recovery results were reviewed to determine whether or not the sample matrix was interfering with the laboratory analyses.

<u>May 2021 UST Investigation</u>

All MS and MSD recoveries were within control limits, with the following exceptions:

- The MSD recoveries for 1,2-dichloroethane (1,2-DCA) and 1-methylnaphthalene in the TP1 (2-4) sample slightly exceeded the acceptable recovery ranges (140% recoveries compared to the 135% limit), indicating a potentially high bias. Neither of the aforementioned constituents was detected above the laboratory RLs in any associated samples and the MS recoveries were within the acceptable recovery ranges; therefore, these quality control (QC) results did not negatively affect sample results.
- The MS recovery for naphthalene in the TP1 (2-4) sample was slightly less than the acceptable recovery range (64% recovery compared to 65% limit), indicating a potentially low bias. Naphthalene was not detected above the laboratory RL in any associated samples and the MSD recovery was within the acceptable recovery range; therefore, this QC result did not negatively affect sample results.

<u>June 2022 PDI</u>

All MS and MSD recoveries were within control limits, with the following exceptions:

- The MS and MSD recovery for ethylbenzene in the B48 (9-10) sample slightly exceeded the acceptable recovery range, indicating a potentially high bias. Ethylbenzene concentrations in soil at this location were below the soil SL even with the potential high bias; therefore, these QC results did not negatively affect sample results.
- The MS recovery for ethylbenzene in the B52 (7-8) sample was less than the acceptable recovery range, indicating a potentially low bias. Ethylbenzene concentrations in soil at this location exceeded the soil SL even with the potential low bias and the MSD recovery was within the acceptable recovery range. Furthermore, ethylbenzene is not a key indicator constituent like TPH-G and benzene. Therefore, this QC result did not negatively affect sample results.
- The MSD recovery for toluene in the B49 (14-15) sample was slightly less than the acceptable recovery range, indicating a potentially low bias. Toluene concentrations in this sample were not detected above the laboratory RL and the soil SL was 45 times higher than the laboratory RL. Based on the lack of SL exceedance, the low laboratory RL, and the MS recovery being within the acceptable recovery range, this QC result did not negatively affect sample results.
- The MS and MSD recoveries for naphthalene, 1-methylnaphthalene, and/or 2-methylnaphthalene were inconsistent in the B48 (9-10), B52 (7-8), B49 (14-15), and B52 (11-12), with recoveries ranging from 0% to 280%. However, the laboratory reported for these QC results that "due to high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data." Since total naphthalenes is not a key indicator constituent like TPH-G and benzene, these QC results did not negatively affect sample results.

Surrogate Spike Recoveries

Each sample analyzed for organic constituents contained surrogate spike compounds. The surrogate recovery percentage is used to determine if the analytical instruments are operating within acceptable control limits. The surrogate recovery results were reviewed to determine whether or not the analytical instruments are operating within acceptable control limits.

<u>May 2021 UST Investigation</u>

All surrogate recoveries were within control limits.

<u>June 2022 PDI</u>

All surrogate recoveries were within control limits, with the following exceptions:

- Slightly low recoveries of the surrogate dibromofluoromethane were noted on three of the 53 analyzed soil samples and a slightly high recovery of the surrogate dibromofluoromethane was noted on one MS sample.
- Slightly high recoveries of the surrogate 1,2-DCA-d4 were noted on eight of the 53 analyzed soil samples and two MS/MSD recoveries.
- Slightly low recoveries of the surrogate toluene-d8 were noted on 11 of the 53 analyzed soil samples and QC samples (e.g., all method blanks, the trip blanks, and most LCS/LCSD samples).

The laboratory director reported the following for the aforementioned surrogate recoveries outside of control limits: "As a reviewer for a batch, I look at all the contributing factors which include passing CCV, Internal [standards] within 50-200%, Passing LCS and lastly surrogates. Surrogates can be outside their recovery for a bunch of reasons. If it was only a particular sample that was failing surrogate limits, a root cause analysis would happen. Your samples pass as a batch by our standards, because all other QC passes. And similar surrogate recoveries occurred for the QC samples including Method blanks and LCS. It is common for the Mass Spec to become temporarily sensitive to certain compounds, including

surrogates. BTEX are notoriously stable." Based on the information from the laboratory director, the surrogate recovery exceptions did not negatively affect sample results.

3. Representativeness

Representativeness was assessed by evaluating the sample collection, handling, preservation, and analysis procedures. All samples were collected, handled, preserved, and analyzed in accordance with the July 2020 Remedial Investigation Work Plan (RIWP; PIONEER 2020a), as modified by an informal sampling plan for the UST investigation and the RIWP Addendum (PIONEER 2022), which were designed to obtain representative samples. All samples were hand-delivered on the same day of collection or stored on ice overnight prior to delivery to the laboratory the following day. Libby Environmental was the contracted laboratory used for all analyses associated with both investigations. The reported temperature range of the samples was acceptable (less than 6 degrees Celsius) for both investigations. In addition, all samples were extracted and analyzed within appropriate holding times listed in the RIWP (PIONEER 2020a) and the RIWP Addendum (PIONEER 2022).

4. Comparability

Comparability was assessed by comparing current sample collection and analysis procedures with historical procedures. The samples were collected and analyzed with standard procedures and are comparable with historical Property data as qualified by the laboratories.

5. Sensitivity

Sensitivity was assessed by comparing actual RLs to applicable SLs for all constituents analyzed in soil. Analytical methods and laboratories were selected to achieve low target reporting limits. Almost all of the actual RLs were less than the corresponding SLs listed in the RIWP (PIONEER 2020a). The only analyzed soil constituents with an actual RL exceeding a corresponding SL are provided in the table below:

Constituent	Highest soil RL (mg/kg)	Most stringent soil SL (mg/kg)
1,2-DCA	0.030	0.023
1,2-Dibromoethane (1,2-DBA)	0.0050	0.00027

In PIONEER's opinion, the actual RLs were reasonably sensitive for 1,2-DCA and 1,2-DBA given the objectives of the investigations. In addition, Model Toxics Control Act cleanup levels for 1,2-DCA and 1,2-DBA often need to be adjusted up as required in Chapter 173-340 of the Washington Administrative Code because the RLs for these two constituents are often less than the calculated SLs/cleanup levels. Therefore, the actual RLs were considered appropriate for the purposes of this investigation.

6. Completeness

Completeness was assessed by calculating the percentage of useable results to all results. A total of 496 sample analyses (including field duplicates and trip blanks) were performed between the two investigations. All of the constituent results are useable as qualified. Thus, the completeness of the analytical data is 100 percent. In addition, the actual laboratory analyses matched the requested laboratory analyses.

7. Conclusions

The quality of the laboratory analysis results obtained during these investigation appears to be acceptable and all data appear to be usable for the purposes of these investigations. No corrective action or further data qualification (beyond what was reported by the laboratory) appears to be necessary.

Table 1: Relative Percent Differences for Field Duplicate Samples

Consituent	Sample Location and Depth Interval (in feet bgs)	Primary Concentration (mg/kg)	Field Duplicate Concentration (mg/kg)	Relative Percent Difference
Benzene	TP1 (2-4)	0.020 U	0.020 U	0.0%
Toluene		0.10 U	0.10 U	0.0%
Ethylbenzene		0.050 U	0.050 U	0.0%
Xylenes		0.15 U	0.15 U	0.0%
1,2-Dichloroethane		0.030 U	0.030 U	0.0%
1,2-Dibromoethane		0.0050 U	0.0050 U	0.0%
1-Methylnaphthalene		0.40 U	0.40 U	0.0%
2-Methylnaphthalene		0.40 U	0.40 U	0.0%
Methyl-tert-butyl-ether		0.050 U	0.050 U	0.0%
Naphthalene		0.15 U	0.15 U	0.0%
TPH-D	TP5 (3-5)	50 U	50 U	0.0%
TPH-G		10.0 U	10.0 U	0.0%
TPH-HO		250 U	250 U	0.0%
Benzene	B48 (9-10)	0.40	0.51	24%
Toluene		0.10 U	0.10 U	0.0%
Ethylbenzene		1.8	2.7	40%
Xylenes		0.67	0.94	34%
1-Methylnaphthalene		0.73	0.86	16%
2-Methylnaphthalene		0.94	2.1	76%
TPH-G		130	120	8.0%
Naphthalene		1.8	2.9	47%
Benzene	B49 (14-15)	0.10	0.055	58%
Toluene		0.10 U	0.10 U	0.0%
Ethylbenzene		0.07	0.062	14%
Xylenes		0.20	0.17	16%
1-Methylnaphthalene		0.40 U	0.40 U	0.0%
2-Methylnaphthalene		0.40 U	0.40 U	0.0%
TPH-G		21	24	13%
Naphthalene		2.2	2.2	0.0%
Benzene	B50 (2-3)	0.020 U	0.020 U	0.0%
Toluene		0.10 U	0.10 U	0.0%
Ethylbenzene		0.050 U	0.050 U	0.0%
Xylenes		0.15 U	0.15 U	0.0%
1-Methylnaphthalene		0.40 U	0.40 U	0.0%
2-Methylnaphthalene		0.40 U	0.40 U	0.0%
TPH-G		10.0 U	12.0	18%
Naphthalene		0.15 U	0.15 U	0.0%
Benzene	B51 (7-8)	0.35	0.27	26%
Toluene		0.49	0.10 U	132%
Ethylbenzene		27	24	12%
Xylenes		9.2	5.0	59%
1-Methylnaphthalene		4.6	20	125%
2-Methylnaphthalene		6.9	31	127%
TPH-G		1,500	1,870	22%
Naphthalene		13	12	8.0%
Benzene	B52 (7-8)	0.29	0.34	18%
Toluene		0.10 U	0.10 U	0.0%
Ethylbenzene		12	14	15%
Xylenes		0.15 U	0.15 U	0.0%
1-Methylnaphthalene		4.1	2.8	39%
2-Methylnaphthalene		8.6	6.3	31%
TPH-G		1,500	1,400	6.9%
Naphthalene		9.3	9.8	5.2%

Table 1: Relative Percent Differences for Field Duplicate Samples

Consituent	Sample Location and Depth Interval (in feet bgs)	Primary Concentration (mg/kg)	Field Duplicate Concentration (mg/kg)	Relative Percent Difference
Benzene	B52 (11-12)	0.020 U	0.020 U	0.0%
Toluene		0.10 U	0.10 U	0.0%
Ethylbenzene		0.050 U	0.050 U	0.0%
Xylenes		0.15 U	0.15 U	0.0%
1-Methylnaphthalene		0.40 U	0.40 U	0.0%
2-Methylnaphthalene		0.40 U	0.40 U	0.0%
TPH-G		10.0 U	10.0 U	0.0%
Naphthalene		0.15 U	0.15 U	0.0%
Benzene	B55 (1-2)	0.020 U	0.020 U	0.0%
Toluene		0.10 U	0.10 U	0.0%
Ethylbenzene		0.050 U	0.050 U	0.0%
Xylenes		0.15 U	0.15 U	0.0%
1-Methylnaphthalene		0.40 U	0.40 U	0.0%
2-Methylnaphthalene		0.40 U	0.40 U	0.0%
TPH-G		10.0 U	10.0 U	0.0%
Naphthalene		0.15 U	0.15 U	0.0%
Benzene	B56 (10-11)	0.030	0.022	31%
Toluene		0.10 U	0.10 U	0.0%
Ethylbenzene		0.050 U	0.050 U	0.0%
Xylenes		0.15 U	0.15 U	0.0%
1-Methylnaphthalene		0.40 U	0.40 U	0.0%
2-Methylnaphthalene		0.40 U	0.40 U	0.0%
TPH-G		10.0	10.0 U	0.0%
Naphthalene		0.15 U	0.15 U	0.0%

Notes:

bgs: below ground surface, mg/kg: milligrams per kilogram.

Soil RPD exceeds 50%, which is the generally accepted industry standard for soil RPDs.

Non-detect values (U) are assumed to equal the full reporting limit for the RPD calculation.

Appendix E

Table 1: Calculation of Groundwater Screening Levels for RI Screening Purposes

Type	Constituent	Potable Groundwater Screening Level for an Unrestricted Land Use Scenario [1] (ug/L)	Groundwater VI Screening Level for an Unrestricted Land Use Scenario [2] (ug/L)	Groundwater Screening Level [3,4] (ug/L)
TPH	TPH-G [3]	800	No Value	800
	TPH-D	500	No Value	500
	TPH-HO	500	No Value	500
VOCs	1,1,1,2-Tetrachloroethane	1.7	7.1	1.7
	1,1,1-Trichloroethane	200	5,400	200
	1,1,2,2-Tetrachloroethane	0.22	5.9	0.22
	1,1,2-Trichloroethane	5.0	5.1	5.0
	1,1-Dichloroethane	7.7	11	7.7
	1,1-Dichloroethylene	7.0	130	7.0
	1,1-Dichloropropene	No Value	No Value	No Value
	1,2,3-Trichlorobenzene	6.4	No Value	6.4
	1,2,3-Trichloropropane	0.00038	20	0.00038
	1,2,4-Trichlorobenzene	15	39	15
	1,2,4-Trimethylbenzene	80	240	80
	1,2-Dibromo-3-chloropropane	0.14	0.042	0.042
	1,2-Dichlorobenzene	600	2,500	600
	1,2-Dichloroethane	4.8	3.5	3.5
	1,2-Dichloropropane	5.0	10.0	5.0
	1,3,5-Trimethylbenzene	80	170	80
	1,3-Dichlorobenzene	No Value	No Value	No Value
	1,3-Dichloropropane	160	No Value	160
	1,4-Dichlorobenzene	75	5.0	5.0
	2,2-Dichloropropane	No Value	No Value	No Value
	2-Chlorotoluene	160	No Value	160
	2-Hexanone	40	7,300	40
	4-Chlorotoluene	160	No Value	160
	Acetone	7,200	No Value	7,200
	Acrylonitrile	0.081	12	0.081
	Benzene	5.0	2.4	2.4
	Bromobenzene	64	630	64
	Bromochloromethane	No Value	No Value	No Value
	Bromodichloromethane	7.1	1.4	1.4
	Bromoform	55	220	55
	Bromomethane	11	11	11
	Carbon Disulfide	800	840	800
	Carbon Tetrachloride	5.0	0.62	0.62
	Chlorobenzene	100	340	100
	Chloroethane	No Value	15,000	15,000
	Chloroform	14	1.2	1.2
	Chloromethane	No Value	150	150
	cis-1,2-Dichloroethylene	16	180	16
	cis-1,3-Dichloropropene	No Value	No Value	No Value
	Cumene	800	910	800
	Dibromochloromethane	5.2	No Value	5.2
	Dichlorodifluoromethane	1,600	4.2	4.2
	Ethylbenzene	700	2,800	700
	Ethylene Dibromide (EDB)	0.050	0.30	0.050
	Hexachlorobutadiene	0.56	0.64	0.56
	Isopropyltoluene	No Value	No Value	No Value
	Methyl Ethyl Ketone	4,800	1,700,000	4,800
	Methyl Isobutyl Ketone	640	470,000	640
	Methylene Bromide	80	97	80
	Methylene Chloride	5.0	780	5.0
	Methyl-t-butyl Ether	24	860	24
	Naphthalene	160	8.8	8.8
	n-Butylbenzene	400	No Value	400
	n-Hexane	480	7.2	7.2
	n-Propylbenzene	800	2,300	800
	p-isopropyltoluene	No Value	No Value	No Value
	sec-Butylbenzene	800	No Value	800
	Styrene	100	8,500	100
	tert-Butylbenzene	800	No Value	800
	Tetrachloroethylene	5.0	25	5.0
	Toluene	640	15,000	640
	trans-1,2-Dichloroethylene	100	77	77
	trans-1,3-Dichloropropene	No Value	No Value	No Value
	Trichloroethylene	4.0	1.4	1.4
	Trichlorofluoromethane	2,400	120	120
	Vinyl Chloride	0.29	0.33	0.29
	Xylenes, Total	1,600	320	320
PAHs	Acenaphthene	480	No Value	480
	Acenaphthylene	No Value	No Value	No Value
	Anthracene	2,400	No Value	2,400
	Benzo(ghi)perylene	No Value	No Value	No Value
	Fluoranthene	640	No Value	640
	Fluorene	320	No Value	320
	Naphthalenes, Total	160	No Value	160
	Phenanthrene	No Value	No Value	No Value
	Pyrene	240	No Value	240
	Total cPAHs [5]	0.20	No Value	0.20
Metals	Arsenic	8.0	No Value	8.0
	Barium	2,000	No Value	2,000
	Cadmium	5.0	No Value	5.0
	Chromium (III)	24,000	No Value	24,000
	Chromium (VI)	0.046	No Value	0.046
	Chromium, Total	100	No Value	100
	Lead	15	No Value	15
	Mercury	2.0	No Value	2.0
	Selenium	50	No Value	50
	Silver	80	No Value	80

Table 1: Calculation of Groundwater Screening Levels for RI Screening Purposes

Type	Constituent	Potable Groundwater Screening Level for an Unrestricted Land Use Scenario [1] (ug/L)	Groundwater VI Screening Level for an Unrestricted Land Use Scenario [2] (ug/L)	Groundwater Screening Level [3,4] (ug/L)

Notes:

No Value: A screening level cannot be calculated because no values exist in the Cleanup Levels and Risk Calculation (CLARC) database (Ecology 2024).

All values are presented as two significant figures in standard notation, except numbers greater than 100 are rounded to a whole number.

[1] See Table 1a for calculation of these screening levels.

[2] See Table 1b for calculation of these screening levels.

[3] The screening level is the most stringent of the screening levels in the two previous columns, unless otherwise noted.

[4] Actual and appropriate practical quantitation limits (PQLs) for some constituents exceed screening levels (e.g., some screening levels are lower than achievable PQLs for approved analytical methods, some PQLs are elevated due to necessary lab dilutions to satisfy lab quality control standards). For current screening purposes, PQL adjustments were not made to these screening levels. Accordingly, a non-detect result with a PQL greater than the screening level was not considered a screening level exceedance. Pursuant to WAC 173-340-720(7)(c), PQL adjustments will be made as necessary when constituents of concern and cleanup levels are defined in the future.

[5] Total cPAHs screening levels were based on the toxicity of benzo(a)pyrene in accordance with WAC 173-340-708(8). Total cPAHs concentrations were calculated using MTCA toxicity equivalence factors.

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Table 1a: Calculation of Potable Groundwater Screening Levels for an Unrestricted Land Use Scenario

Type	Constituent	MTCA Method A Groundwater Cleanup Level [1] (ug/L)	Standard Method B Groundwater Value for Carcinogens [1] (ug/L)	Standard Method B Groundwater Value for Non-Carcinogens [1] (ug/L)	Federal Maximum Contaminant Level (MCL) [1] (ug/L)	State Maximum Contaminant Level (MCL) [1] (ug/L)	Potable Groundwater Screening Level for an Unrestricted Land Use Scenario [2] (ug/L)
TPH	TPH-G [3]	800	--	--	--	--	800
	TPH-D	500	--	--	--	--	500
	TPH-HO	500	--	--	--	--	500
VOCs	1,1,1,2-Tetrachloroethane	--	1.7	240	--	--	1.7
	1,1,1-Trichloroethane	200	--	16,000	200	200	200
	1,1,2,2-Tetrachloroethane	--	0.22	160	--	--	0.22
	1,1,2-Trichloroethane	--	0.77	32	5.0	5.0	5.0 [4]
	1,1-Dichloroethane	--	7.7	1,600	--	--	7.7
	1,1-Dichloroethylene	--	--	400	7.0	7.0	7.0
	1,1-Dichloropropene	--	--	--	--	--	No Value
	1,2,3-Trichlorobenzene	--	--	6.4	--	--	6.4
	1,2,3-Trichloropropane	--	0.00038	32	--	--	0.00038
	1,2,4-Trichlorobenzene	--	1.5	80	70	70	15 [4]
	1,2,4-Trimethylbenzene	--	--	80	--	--	80
	1,2-Dibromo-3-chloropropane	--	0.014	1.6	0.20	0.20	0.14 [4]
	1,2-Dichlorobenzene	--	--	720	600	600	600
	1,2-Dichloroethane	5.0	0.48	48	5.0	5.0	4.8 [4]
	1,2-Dichloropropane	--	1.2	320	5.0	5.0	5.0 [4]
	1,3,5-Trimethylbenzene	--	--	80	--	--	80
	1,3-Dichlorobenzene	--	--	--	--	--	No Value
	1,3-Dichloropropane	--	--	160	--	--	160
	1,4-Dichlorobenzene	--	8.1	560	75	75	75 [4]
	2,2-Dichloropropane	--	--	--	--	--	No Value
	2-Chlorotoluene	--	--	160	--	--	160
	2-Hexanone	--	--	40	--	--	40
	4-Chlorotoluene	--	--	160	--	--	160
	Acetone	--	--	7,200	--	--	7,200
	Acrylonitrile	--	0.081	8.0	--	--	0.081
	Benzene	5.0	0.80	32	5.0	5.0	5.0 [4]
	Bromobenzene	--	--	64	--	--	64
	Bromochloromethane	--	--	--	--	--	No Value
	Bromodichloromethane	--	0.71	160	80	80	7.1 [4,5]
	Bromoform	--	5.5	160	80	80	55 [4,5]
	Bromomethane	--	--	11	--	--	11
	Carbon Disulfide	--	--	800	--	--	800
	Carbon Tetrachloride	--	0.63	32	5.0	5.0	5.0 [4]
	Chlorobenzene	--	--	160	100	100	100
	Chloroethane	--	--	--	--	--	No Value
	Chloroform	--	1.4	80	80	80	14 [4,5]
	Chloromethane	--	--	--	--	--	No Value
	cis-1,2-Dichloroethylene	--	--	16	70	70	16
	cis-1,3-Dichloropropene	--	--	--	--	--	No Value
	Cumene	--	--	800	--	--	800
	Dibromochloromethane	--	0.52	160	80	80	5.2 [4,5]
	Dichlorodifluoromethane	--	--	1,600	--	--	1,600
	Ethylbenzene	700	--	800	700	700	700
	Ethylene Dibromide (EDB)	0.010	0.022	72	0.050	0.050	0.050 [4]
	Hexachlorobutadiene	--	0.56	8.0	--	--	0.56
	Isopropyltoluene	--	--	--	--	--	No Value
	Methyl Ethyl Ketone	--	--	4,800	--	--	4,800
	Methyl Isobutyl Ketone	--	--	640	--	--	640
	Methylene Bromide	--	--	80	--	--	80
	Methylene Chloride	5.0	5.8	48	5.0	5.0	5.0
	Methyl-t-butyl Ether	20	24	--	--	--	24
	Naphthalene	160	--	160	--	--	160
	n-Butylbenzene	--	--	400	--	--	400
	n-Hexane	--	--	480	--	--	480
	n-Propylbenzene	--	--	800	--	--	800
	p-isopropyltoluene	--	--	--	--	--	No Value
	sec-Butylbenzene	--	--	800	--	--	800
	Styrene	--	--	1,600	100	100	100
	tert-Butylbenzene	--	--	800	--	--	800
	Tetrachloroethylene	5.0	21	48	5.0	5.0	5.0
	Toluene	1,000	--	640	1,000	1,000	640
	trans-1,2-Dichloroethylene	--	--	160	100	100	100
	trans-1,3-Dichloropropene	--	--	--	--	--	No Value
	Trichloroethylene	5.0	0.54	4.0	5.0	5.0	4.0 [4]
	Trichlorofluoromethane	--	--	2,400	--	--	2,400
	Vinyl Chloride	0.20	0.029	24	2.0	2.0	0.29 [4]
	Xylenes, Total	1,000	--	1,600	10,000	10,000	1,600
PAHs	Acenaphthene	--	--	480	--	--	480
	Acenaphthylene	--	--	--	--	--	No Value
	Anthracene	--	--	2,400	--	--	2,400
	Benzo(ghi)perylene	--	--	--	--	--	No Value
	Fluoranthene	--	--	640	--	--	640
	Fluorene	--	--	320	--	--	320
	Naphthalenes, Total	160	--	160	--	--	160
	Phenanthrene	--	--	--	--	--	No Value
	Pyrene	--	--	240	--	--	240
	Total cPAHs [6]	0.10	0.023	4.8	0.20	0.20	0.20 [4]
Metals	Arsenic	5.0	0.058	4.8	10.0	10.0	8.0 [7]
	Barium	--	--	3,200	2,000	2,000	2,000
	Cadmium	5.0	--	8.0	5.0	5.0	5.0
	Chromium (III)	--	--	24,000	--	--	24,000
	Chromium (VI)	--	0.046	48	--	--	0.046
	Chromium, Total	50	--	--	100	100	100
	Lead	15	--	--	15	15	15
	Mercury	2.0	--	--	2.0	2.0	2.0
	Selenium	--	--	80	50	50	50
	Silver	--	--	80	--	--	80

Table 1a: Calculation of Potable Groundwater Screening Levels for an Unrestricted Land Use Scenario

Type	Constituent	MTCA Method A Groundwater Cleanup Level [1] (ug/L)	Standard Method B Groundwater Value for Carcinogens [1] (ug/L)	Standard Method B Groundwater Value for Non-Carcinogens [1] (ug/L)	Federal Maximum Contaminant Level (MCL) [1] (ug/L)	State Maximum Contaminant Level (MCL) [1] (ug/L)	Potable Groundwater Screening Level for an Unrestricted Land Use Scenario [2] (ug/L)

Notes:

--: No value exists for this constituent in the Cleanup Levels and Risk Calculation (CLARC) database (Ecology 2024). No Value: A screening level cannot be calculated because no values exist in CLARC.

All values are presented as two significant figures in standard notation, except numbers greater than 100 are rounded to a whole number.

[1] Values from CLARC (Ecology 2024), unless otherwise noted.

[2] The screening level is the most stringent of the standard Method B groundwater value for carcinogens, the standard Method B groundwater value for non-carcinogens, the federal MCL, and the state MCL, unless otherwise noted. The MTCA Method A groundwater cleanup level was used if no other values were available.

[3] Because benzene is present in groundwater, the MTCA Method A groundwater cleanup level of 800 ug/L applies.

[4] In accordance with WAC 173-340-720(7)(b), the standard Method B value for carcinogens was adjusted upward towards the MCL by a maximum factor of ten (not to exceed the MCL).

[5] In addition to the individual screening levels, the combined screening level for the trihalomethanes (i.e., bromodichloromethane, bromoform, chloroform, and dibromochloromethane) is the 80 ug/L MCL.

[6] Total cPAH screening levels were based on the toxicity of benzo(a)pyrene in accordance with WAC 173-340-708(8). Total cPAH concentrations will be calculated using MTCA toxicity equivalence factors.

[7] Adjusted to the Puget Sound Basin groundwater background concentration of 8 ug/L (Ecology 2022a) in accordance with WAC 173-340-720(7)(c).

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Table 1b: Calculation of Groundwater Vapor Intrusion Screening Levels

Type	Constituent	Unrestricted Land Use Scenario			Industrial Land Use Scenario		
		Standard Method B Groundwater VI Screening Level for Carcinogens [1] (ug/L)	Standard Method B Groundwater VI Screening Level for Non-carcinogens [1] (ug/L)	Groundwater VI Screening Level for an Unrestricted Land Use Scenario [2] (ug/L)	Standard Method C Groundwater VI Screening Level for Carcinogens [1] (ug/L)	Standard Method C VI Groundwater Screening Level for Non-carcinogens [1] (ug/L)	Groundwater VI Screening Level for an Industrial Land Use Scenario [2] (ug/L)
TPH	TPH-G	--	--	No Value	--	--	No Value
	TPH-D	--	--	No Value	--	--	No Value
VOCs	1,1,1,2-Tetrachloroethane	7.1	--	7.1	71	--	71
	1,1,1-Trichloroethane	--	5,400	5,400	--	12,000	12,000
	1,1,2,2-Tetrachloroethane	5.9	--	5.9	59	--	59
	1,1,2-Trichloroethane	8.8	5.1	5.1	88	11	11
	1,1-Dichloroethane	11	--	11	110	--	110
	1,1-Dichloroethylene	--	130	130	--	280	280
	1,1-Dichloropropene	--	--	No Value	--	--	No Value
	1,2,3-Trichlorobenzene	--	--	No Value	--	--	No Value
	1,2,3-Trichloropropane	--	20	20	--	44	44
	1,2,4-Trichlorobenzene	--	39	39	--	84	84
	1,2,4-Trimethylbenzene	--	240	240	--	520	520
	1,2-Dibromo-3-chloropropane	0.042	35	0.042	1.6	77	1.6
	1,2-Dichlorobenzene	--	2,500	2,500	--	5,500	5,500
	1,2-Dichloroethane	3.5	120	3.5	35	250	35
	1,2-Dichloropropane	10.0	28	10.0	100	61	61
	1,3,5-Trimethylbenzene	--	170	170	--	370	370
	1,3-Dichlorobenzene	--	--	No Value	--	--	No Value
	1,3-Dichloropropane	--	--	No Value	--	--	No Value
	1,4-Dichlorobenzene	5.0	8,000	5.0	50	17,000	50
	2,2-Dichloropropane	--	--	No Value	--	--	No Value
	2-Chlorotoluene	--	--	No Value	--	--	No Value
	2-Hexanone	--	7,300	7,300	--	16,000	16,000
	4-Chlorotoluene	--	--	No Value	--	--	No Value
	Acetone	--	--	No Value	--	--	No Value
	Acrylonitrile	12	290	12	120	630	120
	Benzene	2.4	100	2.4	24	220	24
	Bromobenzene	--	630	630	--	1,400	1,400
	Bromochloromethane	--	--	No Value	--	--	No Value
	Bromodichloromethane	1.4	--	1.4	14	--	14
	Bromoform	220	--	220	2,200	--	2,200
	Bromomethane	--	11	11	--	24	24
	Carbon Disulfide	--	840	840	--	1,800	1,800
	Carbon Tetrachloride	0.62	68	0.62	6.2	150	6.2
	Chlorobenzene	--	340	340	--	750	750
	Chloroethane	--	15,000	15,000	--	32,000	32,000
	Chloroform	1.2	490	1.2	12	1,100	12
	Chloromethane	--	150	150	--	330	330
	cis-1,2-Dichloroethylene	--	180	180	--	400	400
	cis-1,3-Dichloropropene	--	--	No Value	--	--	No Value
	Cumene	--	910	910	--	2,000	2,000
	Dibromochloromethane	--	--	No Value	--	--	No Value
	Dichlorodifluoromethane	--	4.2	4.2	--	9.2	9.2
	Ethylbenzene	--	2,800	2,800	--	6,100	6,100
	Ethylene Dibromide (EDB)	0.30	290	0.30	3.0	640	3.0
	Hexachlorobutadiene	0.64	--	0.64	6.4	--	6.4
	Isopropyltoluene	--	--	No Value	--	--	No Value
	Methyl Ethyl Ketone	--	1,700,000	1,700,000	--	3,700,000	3,700,000
	Methyl Isobutyl Ketone	--	470,000	470,000	--	1,000,000	1,000,000
	Methylene Bromide	--	97	97	--	210	210
	Methylene Chloride	780	3,300	780	30,000	7,100	7,100
	Methyl-t-butyl Ether	860	120,000	860	8,600	270,000	8,600
	Naphthalene	8.8	160	8.8	88	360	88
	n-Butylbenzene	--	--	No Value	--	--	No Value
	n-Hexane	--	7.2	7.2	--	16	16
	n-Propylbenzene	--	2,300	2,300	--	4,900	4,900
	p-isopropyltoluene	--	--	No Value	--	--	No Value
	sec-Butylbenzene	--	--	No Value	--	--	No Value
	Styrene	--	8,500	8,500	--	19,000	19,000
	tert-Butylbenzene	--	--	No Value	--	--	No Value
	Tetrachloroethylene	25	48	25	250	100	100
	Toluene	--	15,000	15,000	--	34,000	34,000
	trans-1,2-Dichloroethylene	--	77	77	--	170	170
	trans-1,3-Dichloropropene	--	--	No Value	--	--	No Value
	Trichloroethylene	1.4	3.9	1.4	26	8.6	8.6
	Trichlorofluoromethane	--	120	120	--	260	260
	Vinyl Chloride	0.33	54	0.33	3.3	120	3.3
	Xylenes, Total	--	320	320	--	710	710

Notes:

--: No value exists for this constituent in the Cleanup Levels and Risk Calculation (CLARC) database (Ecology 2024). No Value: A screening level cannot be calculated because no values exist in CLARC.

Non-volatile constituents (e.g., TPH-HO, SVOCs, metals) are not included in this table.

All values are presented as two significant figures in standard notation, except numbers greater than 100 are rounded to a whole number.

[1] Values from CLARC (Ecology 2024), unless otherwise noted.

[2] The screening level is the most stringent of the carcinogenic and non-carcinogenic values.

Table 2: Calculation of Soil Screening Levels for RI Screening Purposes

Type	Constituent	Soil-to-Groundwater Screening Level for an Unrestricted Land Use Scenario [1] (mg/kg)	Soil Direct Contact Screening Level for an Unrestricted Land Use Scenario [2] (mg/kg)	Soil Screening Level [3,4] (mg/kg)
TPH	TPH-G	30	4,700	30
	TPH-D	2,000	3,000	2,000
	TPH-HO	2,000	3,000	2,000
VOCs	1,1,1,2-Tetrachloroethane	0.019	38	0.019
	1,1,1-Trichloroethane	3.2	160,000	3.2
	1,1,2,2-Tetrachloroethane	0.0023	5.0	0.0023
	1,1,2-Trichloroethane	0.052	18	0.052
	1,1-Dichloroethane	0.067	180	0.067
	1,1-Dichloroethylene	0.075	4,000	0.075
	1,1-Dichloropropene	No Value	No Value	No Value
	1,2,3-Trichlorobenzene	0.77	64	0.77
	1,2,3-Trichloropropane	0.0000052	0.0063	0.0000052
	1,2,4-Trichlorobenzene	2.2	34	2.2
	1,2,4-Trimethylbenzene	4.5	800	4.5
	1,2-Dibromo-3-chloropropane	0.00058	0.23	0.00058
	1,2-Dichlorobenzene	22	7,200	22
	1,2-Dichloroethane	0.025	11	0.025
	1,2-Dichloropropane	0.040	27	0.040
	1,3,5-Trimethylbenzene	4.4	800	4.4
	1,3-Dichlorobenzene	223	No Value	223
	1,3-Dichloropropane	1.6	1,600	1.6
	1,4-Dichlorobenzene	0.28	190	0.28
	2,2-Dichloropropane	No Value	No Value	No Value
	2-Chlorotoluene	5.8	1,600	5.8
	2-Hexanone	0.21	400	0.21
	4-Chlorotoluene	5.7	1,600	5.7
	Acetone	30	72,000	30
	Acrylonitrile	0.00038	1.9	0.00038
	Benzene	0.023	18	0.023
	Bromobenzene	1.5	640	1.5
	Bromochloromethane	4,916	No Value	4,916
	Bromodichloromethane	0.0095	16	0.0095
	Bromoform	0.80	130	0.80
	Bromomethane	0.056	110	0.056
	Carbon Disulfide	5.2	8,000	5.2
	Carbon Tetrachloride	0.011	14	0.011
	Chlorobenzene	2.3	1,600	2.3
	Chloroethane	95	No Value	95
	Chloroform	0.010	32	0.010
	Chloromethane	0.75	No Value	0.75
	cis-1,2-Dichloroethylene	0.12	160	0.12
	cis-1,3-Dichloropropene	No Value	No Value	No Value
	Cumene	50	8,000	50
	Dibromochloromethane	0.035	12	0.035
	Dichlorodifluoromethane	0.11	16,000	0.11
	Ethylbenzene	15	8,000	15
	Ethylene Dibromide (EDB)	0.00048	0.50	0.00048
	Hexachlorobutadiene	0.042	13	0.042
	Isopropyltoluene	No Value	No Value	No Value
	Methyl Ethyl Ketone	21	48,000	21
	Methyl Isobutyl Ketone	3.2	6,400	3.2
	Methylene Bromide	0.47	800	0.47
	Methylene Chloride	0.025	94	0.025
	Methyl-t-butyl Ether	0.12	560	0.12
	Naphthalene	0.92	1,600	0.92
	n-Butylbenzene	52	4,000	52
	n-Propylbenzene	58	8,000	58
	p-isopropyltoluene	No Value	No Value	No Value
	sec-Butylbenzene	93	8,000	93
	Styrene	8.1	16,000	8.1
	tert-Butylbenzene	71	8,000	71
	Tetrachloroethylene	0.13	480	0.13
	Toluene	10	6,400	10
	trans-1,2-Dichloroethylene	0.59	1,600	0.59
	trans-1,3-Dichloropropene	No Value	No Value	No Value
	Trichloroethylene	0.017	12	0.017
	Trichlorofluoromethane	1.5	24,000	1.5
	Vinyl Chloride	0.0021	0.67	0.0021
	Xylenes, Total	7.6	16,000	7.6
PAHs	Acenaphthene	81	4,800	81
	Acenaphthylene	No Value	No Value	No Value
	Anthracene	4.3	24,000	4.3
	Benzo(ghi)perylene	No Value	No Value	No Value
	Fluoranthene	54	3,200	54
	Fluorene	55	3,200	55
	Naphthalenes, Total	17	1,600	17
	Phenanthrene	No Value	No Value	No Value
	Pyrene	39	2,400	39
	Total cPAHs [5]	6.6	0.19	0.19
Metals	Arsenic	20	20	20
	Barium	1,648	16,000	1,648
	Cadmium	0.77	80	0.77
	Chromium (III)	480,096	120,000	120,000
	Chromium (VI)	0.018	0.38	0.018 [6]
	Chromium, Total	No Value	No Value	No Value [6]
	Lead	3,000	250	250
	Mercury	2.1	24	2.1
	Selenium	5.2	400	5.2
	Silver	14	400	14

Table 2: Calculation of Soil Screening Levels for RI Screening Purposes

Type	Constituent	Soil-to-Groundwater Screening Level for an Unrestricted Land Use Scenario [1] (mg/kg)	Soil Direct Contact Screening Level for an Unrestricted Land Use Scenario [2] (mg/kg)	Soil Screening Level [3,4] (mg/kg)

Notes:

No Value: A screening level cannot be calculated because no values exist in the Cleanup Levels and Risk Calculation (CLARC) database (Ecology 2024).

All values are presented as two significant figures in standard notation, except numbers greater than 100 are rounded to a whole number.

[1] See Table 2a for calculation of these screening levels.

[2] See Table 2b for calculation of these screening levels.

[3] The screening level is the most stringent of the screening levels in the two previous columns, unless otherwise noted.

[4] Actual and appropriate practical quantitation limits (PQLs) for some constituents exceed screening levels (e.g., some screening levels are lower than achievable PQLs for approved analytical methods, some PQLs are elevated due to necessary lab dilutions to satisfy lab quality control standards). For current screening purposes, PQL adjustments were not made to these screening levels. Accordingly, a non-detect result with a PQL greater than the screening level was not considered a screening level exceedance. Pursuant to WAC 173-340-740(5)(c), PQL adjustments will be made as necessary when constituents of concern and cleanup levels are defined in the future.

[5] Total cPAHs screening levels were based on the toxicity of benzo(a)pyrene in accordance with WAC 173-340-708(8). Total cPAHs concentrations were calculated using MTCA toxicity equivalence factors.

[6] The Puget Sound natural background concentration for total chromium is 48 mg/kg (Ecology 1994). Unless there is a known chromium source, chromium (VI) is typically not evaluated if the maximum total chromium concentration is less than the natural background concentration in accordance with WAC 173-340-740(5)(c).

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Table 2a: Calculation of Soil-to-Groundwater Screening Levels for an Unrestricted Land Use Scenario

Type	Constituent	Target Groundwater Concentration [1] (ug/L)	Physiochemical Properties [2]				Soil-to-Groundwater Calculations		Soil-to-Groundwater Screening Level for an Unrestricted Land Use Scenario [5] (mg/kg)
			Henry's Law Constant (Hcc) (unitless)	Organic Carbon Partitioning Coefficient (Koc) (L/kg)	Aqueous Solubility (mg/L)	Distribution Coefficient (Kd) for Metals (L/kg)	Soil Concentration Protective of Target Groundwater Concentration [3] (mg/kg)	Soil Saturation Concentration [4] (mg/kg)	
TPH	TPH-G [6]	800	--	--	--	Not applicable	30	1,000	30
	TPH-D [6]	500	--	--	--	Not applicable	1,000,000	2,000	2,000
	TPH-HO [6]	500	--	--	--	Not applicable	1,000,000	2,000	2,000
VOCs	1,1,1,2-Tetrachloroethane	1.7	0.047	86	1,070	Not applicable	0.019	605	0.019
	1,1,1-Trichloroethane	200	0.42	135	1,290	Not applicable	3.2	1,036	3.2
	1,1,2,2-Tetrachloroethane	0.22	0.0073	79	2,830	Not applicable	0.0023	1,507	0.0023
	1,1,2-Trichloroethane	5.0	0.018	75	4,590	Not applicable	0.052	2,371	0.052
	1,1-Dichloroethane	7.7	0.14	53	5,040	Not applicable	0.067	2,192	0.067
	1,1-Dichloroethylene	7.0	0.70	65	2,420	Not applicable	0.075	1,292	0.075
	1,1-Dichloropropene	No Value	--	--	--	Not applicable	--	--	No Value
	1,2,3-Trichlorobenzene	6.4	0.017	1,383	18	Not applicable	0.77	108	0.77
	1,2,3-Trichloropropane	0.00038	0.0069	116	1,750	Not applicable	0.0000052	1,202	0.0000052
	1,2,4-Trichlorobenzene	15	0.024	1,659	49	Not applicable	2.2	351	2.2
	1,2,4-Trimethylbenzene	80	0.11	614	57	Not applicable	4.5	159	4.5
	1,2-Dibromo-3-chloropropane	0.042	0.0026	116	1,230	Not applicable	0.00058	845	0.00058
	1,2-Dichlorobenzene	600	0.037	379	156	Not applicable	22	280	22
	1,2-Dichloroethane	3.5	0.028	38	8,600	Not applicable	0.025	3,113	0.025
	1,2-Dichloropropane	5.0	0.065	47	2,800	Not applicable	0.040	1,129	0.040
	1,3,5-Trimethylbenzene	80	0.16	602	48	Not applicable	4.4	132	4.4
	1,3-Dichlorobenzene	No Value	0.051	375	125	Not applicable	--	223	223
	1,3-Dichloropropane	160	0.021	72	2,750	Not applicable	1.6	1,389	1.6
	1,4-Dichlorobenzene	5.0	0.046	616	81	Not applicable	0.28	227	0.28
	2,2-Dichloropropane	No Value	--	--	--	Not applicable	--	--	No Value
	2-Chlorotoluene	160	0.071	383	374	Not applicable	5.8	679	5.8
	2-Hexanone	40	0.0019	15	17,200	Not applicable	0.21	4,525	0.21
	4-Chlorotoluene	160	0.081	375	106	Not applicable	5.7	189	5.7
	Acetone	7,200	0.00088	2.4	1,000,000	Not applicable	30	210,005	30
	Acrylonitrile	0.081	0.0032	8.5	74,500	Not applicable	0.00038	17,584	0.00038
	Benzene	2.4	0.13	62	1,750	Not applicable	0.023	826	0.023
	Bromobenzene	64	0.043	234	446	Not applicable	1.5	529	1.5
	Bromochloromethane	No Value	0.036	22	16,700	Not applicable	--	4,916	4,916
	Bromodichloromethane	1.4	0.049	32	3,032	Not applicable	0.0095	1,024	0.0095
	Bromoform	55	0.010	126	3,100	Not applicable	0.80	2,263	0.80
	Bromomethane	11	0.21	9.0	15,200	Not applicable	0.056	3,891	0.056
	Carbon Disulfide	800	0.38	22	2,160	Not applicable	5.2	701	5.2
	Carbon Tetrachloride	0.62	0.68	152	793	Not applicable	0.011	711	0.011
	Chlorobenzene	100	0.066	224	498	Not applicable	2.3	571	2.3
	Chloroethane	15,000	0.31	22	6,710	Not applicable	95	2,136	95
	Chloroform	1.2	0.092	53	7,950	Not applicable	0.010	3,423	0.010
	Chloromethane	150	0.27	6.0	5,320	Not applicable	0.75	1,322	0.75
	cis-1,2-Dichloroethylene	16	0.10	40	6,410	Not applicable	0.12	2,404	0.12
	cis-1,3-Dichloropropene	No Value	--	--	--	Not applicable	--	--	No Value
	Cumene	800	0.20	698	61	Not applicable	50	193	50
	Dibromochloromethane	5.2	0.021	32	2,700	Not applicable	0.035	906	0.035
	Dichlorodifluoromethane	4.2	11	44	280	Not applicable	0.11	370	0.11
	Ethylbenzene	700	0.16	204	169	Not applicable	15	181	15
	Ethylene Dibromide (EDB)	0.050	0.014	66	3,910	Not applicable	0.00048	1,871	0.00048
	Hexachlorobutadiene	0.56	0.18	845	3.2	Not applicable	0.042	12.0	0.042
	Isopropyltoluene	No Value	--	--	--	Not applicable	--	--	No Value
	Methyl Ethyl Ketone	4,800	0.0013	4.5	223,000	Not applicable	21	48,850	21
	Methyl Isobutyl Ketone	640	0.0029	13	19,000	Not applicable	3.2	4,810	3.2
	Methylene Bromide	80	0.019	22	11,900	Not applicable	0.47	3,486	0.47
	Methylene Chloride	5.0	0.084	10.0	13,000	Not applicable	0.025	3,241	0.025
	Methyl-t-butyl Ether	24	0.011	11	50,000	Not applicable	0.12	12,338	0.12
	Naphthalene	8.8	0.0083	1,191	31	Not applicable	0.92	161	0.92
	n-Butylbenzene	400	0.29	1,482	12	Not applicable	52	76	52
	n-Propylbenzene	800	0.20	813	52	Not applicable	58	190	58
	p-isopropyltoluene	No Value	--	--	--	Not applicable	--	--	No Value
	sec-Butylbenzene	800	0.28	1,331	18	Not applicable	93	102	93
	Styrene	100	0.054	912	310	Not applicable	8.1	1,251	8.1
	tert-Butylbenzene	800	0.21	1,001	30	Not applicable	71	130	71
	Tetrachloroethylene	5.0	0.38	265	206	Not applicable	0.13	277	0.13
	Toluene	640	0.15	140	526	Not applicable	10	421	10
	trans-1,2-Dichloroethylene	77	0.24	38	4,520	Not applicable	0.59	1,719	0.59
	trans-1,3-Dichloropropene	No Value	--	--	--	Not applicable	--	--	No Value
	Trichloroethylene	1.4	0.23	94	1,280	Not applicable	0.017	787	0.017
	Trichlorofluoromethane	120	2.7	44	1,100	Not applicable	1.5	678	1.5
	Vinyl Chloride	0.29	0.85	22	8,800	Not applicable	0.0021	3,211	0.0021
	Xylenes, Total	320	0.14	233	171	Not applicable	7.6	204	7.6
PAHs	Acenaphthene	480	0.0025	4,898	3.9	Not applicable	199	81	81
	Acenaphthylene	No Value	--	--	--	Not applicable	--	--	No Value
	Anthracene	2,400	0.00065	23,493	0.043	Not applicable	4,746	4.3	4.3
	Benzo(ghi)perylene	No Value	--	--	--	Not applicable	--	--	No Value
	Fluoranthene	640	0.000091	49,096	0.26	Not applicable	2,642	54	54
	Fluorene	320	0.0012	7,707	1.7	Not applicable	208	55	55
	Naphthalenes, Total	160	0.0083	1,191	31	Not applicable	17	161	17
	Phenanthrene	No Value	--	--	--	Not applicable	--	--	No Value
	Pyrene	240	0.00011	67,992	0.14	Not applicable	1,372	39	39
	Total cPAHs [7]	0.20	0.0000036	968,774	0.0016	Not applicable	16	6.6	6.6
Metals	Arsenic	8.0	0.0	--	--	29	4.7	Not applicable	20 [8]
	Barium	2,000	0.0	--	--	41	1,648	Not applicable	1,648
	Cadmium	5.0	0.0	--	--	6.7	0.69	Not applicable	0.77 [9]
	Chromium (III)	24,000	0.0	--	--	1,000	480,096	Not applicable	480,096
	Chromium (VI)	0.046	0.0	--	1,690,000	19	0.018	Not applicable	0.018
	Chromium, Total	100	0.0	--	--	--	--	Not applicable	No Value
	Lead	15	0.0	--	--	10,000	3,000	Not applicable	3,000
	Mercury	2.0	0.17	--	0.060	52	2.1	Not applicable	2.1
	Selenium	50	0.0	--	--	5.0	5.2	Not applicable	5.2
	Silver	80	0.0	--	--	8.3	14	Not applicable	14

Table 2a: Calculation of Soil-to-Groundwater Screening Levels for an Unrestricted Land Use Scenario

Type	Constituent	Target Groundwater Concentration [1] (ug/L)	Physiochemical Properties [2]				Soil-to-Groundwater Calculations		Soil-to-Groundwater Screening Level for an Unrestricted Land Use Scenario [5] (mg/kg)
			Henry's Law Constant (Hcc) (unitless)	Organic Carbon Partitioning Coefficient (Koc) (L/kg)	Aqueous Solubility (mg/L)	Distribution Coefficient (Kd) for Metals (L/kg)	Soil Concentration Protective of Target Groundwater Concentration [3] (mg/kg)	Soil Saturation Concentration [4] (mg/kg)	

Notes:

--: No value exists for this constituent in the Cleanup Levels and Risk Calculation (CLARC) database (Ecology 2024). No Value: A screening level cannot be calculated because no values exist in CLARC.

All values are presented as two significant figures in standard notation, except numbers greater than 100 are rounded to a whole number.

[1] See Table 1 for calculation of groundwater screening levels.

[2] Values from CLARC (Ecology 2024), unless otherwise noted. Henry's Law Constant values are for 13 degrees Celsius.

[3] Calculated using the MTCA three-phase model in accordance with WAC 173-340-747(5), unless otherwise noted. Standard MTCA defaults in WAC 173-340-747(4) were used for all three-phase model inputs, with the exception of fraction organic carbon. Two representative soil samples collected from the site have been analyzed for total organic carbon (i.e., 0.18 % in a MW8 soil sample collected from 6-8 feet bgs and 0.66% in a B33 soil sample collected from 2-4 feet bgs). The median/average of these two representative fraction organic carbon results was used (0.0042). Other site-specific modifications to soil-to-groundwater screening levels may be calculated in the future pursuant to WAC 173-340-747.

[4] Calculated by substituting aqueous solubility value for target groundwater concentration * dilution factor in MTCA Equation 747-1 (Ecology 2001a), unless otherwise noted.

[5] Most stringent of soil concentration protective of target groundwater concentration and soil saturation concentration, unless otherwise noted.

[6] Soil Concentrations Protective of Groundwater Screening Level are the soil leaching to groundwater values used when determining Method A cleanup levels (Ecology 2001a). Soil Saturation Concentrations are default residual soil saturation concentrations in MTCA Table 745-5. Site-specific TPH soil screening levels may be calculated in the future.

[7] Total cPAH screening levels were based on the toxicity of benzo(a)pyrene in accordance with WAC 173-340-708(8). Total cPAH concentrations will be calculated using MTCA toxicity equivalence factors.

[8] Adjusted to accepted soil background concentration of 20 mg/kg per WAC 173-340-740(5)(c) (see MTCA Table 740-1 footnote b).

[9] Adjusted to Puget Sound natural background concentration (Ecology 1994) in accordance with WAC 173-340-740(5)(c).

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Table 2b: Calculation of Soil Direct Contact Screening Levels

Type	Constituent	Unrestricted Land Use Scenario			Industrial Land Use Scenario		
		Standard Method B Soil Value for Carcinogens [1] (mg/kg)	Standard Method B Soil Value for Non-carcinogens [1] (mg/kg)	Soil Direct Contact Screening Level for an Unrestricted Land Use Scenario [2] (mg/kg)	Standard Method C Soil Value for Carcinogens [1] (mg/kg)	Standard Method C Soil Value for Non-carcinogens [1] (mg/kg)	Soil Direct Contact Screening Level for an Industrial Land Use Scenario [2,3] (mg/kg)
TPH	TPH-G	--	--	4,700 [4]	--	--	150,000 [4]
	TPH-D	--	--	3,000 [4]	--	--	39,000 [4]
	TPH-HO	--	--	3,000 [4]	--	--	39,000 [4]
VOCs	1,1,1,2-Tetrachloroethane	38	2,400	38	5,000	110,000	5,000
	1,1,1-Trichloroethane	--	160,000	160,000	--	7,000,000	7,000,000
	1,1,2,2-Tetrachloroethane	5.0	1,600	5.0	660	70,000	660
	1,1,2-Trichloroethane	18	320	18	2,300	14,000	2,300
	1,1-Dichloroethane	180	16,000	180	23,000	700,000	23,000
	1,1-Dichloroethylene	--	4,000	4,000	--	180,000	180,000
	1,1-Dichloropropene	--	--	No Value	--	--	No Value
	1,2,3-Trichlorobenzene	--	64	64	--	2,800	2,800
	1,2,3-Trichloropropane	0.0063	320	0.0063	4.4	14,000	4.4
	1,2,4-Trichlorobenzene	34	800	34	4,500	35,000	4,500
	1,2,4-Trimethylbenzene	--	800	800	--	35,000	35,000
	1,2-Dibromo-3-chloropropane	0.23	16	0.23	160	700	160
	1,2-Dichlorobenzene	--	7,200	7,200	--	320,000	320,000
	1,2-Dichloroethane	11	480	11	1,400	21,000	1,400
	1,2-Dichloropropane	27	3,200	27	3,500	140,000	3,500
	1,3,5-Trimethylbenzene	--	800	800	--	35,000	35,000
	1,3-Dichlorobenzene	--	--	No Value	--	--	No Value
	1,3-Dichloropropane	--	1,600	1,600	--	70,000	70,000
	1,4-Dichlorobenzene	190	5,600	190	24,000	250,000	24,000
	2,2-Dichloropropane	--	--	No Value	--	--	No Value
	2-Chlorotoluene	--	1,600	1,600	--	70,000	70,000
	2-Hexanone	--	400	400	--	18,000	18,000
	4-Chlorotoluene	--	1,600	1,600	--	70,000	70,000
	Acetone	--	72,000	72,000	--	3,200,000	3,200,000
	Acrylonitrile	1.9	80	1.9	240	3,500	240
	Benzene	18	320	18	2,400	14,000	2,400
	Bromobenzene	--	640	640	--	28,000	28,000
	Bromochloromethane	--	--	No Value	--	--	No Value
	Bromodichloromethane	16	1,600	16	2,100	70,000	2,100
	Bromoform	130	1,600	130	17,000	70,000	17,000
	Bromomethane	--	110	110	--	4,900	4,900
	Carbon Disulfide	--	8,000	8,000	--	350,000	350,000
	Carbon Tetrachloride	14	320	14	1,900	14,000	1,900
	Chlorobenzene	--	1,600	1,600	--	70,000	70,000
	Chloroethane	--	--	No Value	--	--	No Value
	Chloroform	32	800	32	4,200	35,000	4,200
	Chloromethane	--	--	No Value	--	--	No Value
	cis-1,2-Dichloroethylene	--	160	160	--	7,000	7,000
	cis-1,3-Dichloropropene	--	--	No Value	--	--	No Value
	Cumene	--	8,000	8,000	--	350,000	350,000
	Dibromochloromethane	12	1,600	12	1,600	70,000	1,600
	Dichlorodifluoromethane	--	16,000	16,000	--	700,000	700,000
	Ethylbenzene	--	8,000	8,000	--	350,000	350,000
	Ethylene Dibromide (EDB)	0.50	720	0.50	66	32,000	66
	Hexachlorobutadiene	13	80	13	1,700	3,500	1,700
	Isopropyltoluene	--	--	No Value	--	--	No Value
	Methyl Ethyl Ketone	--	48,000	48,000	--	2,100,000	2,100,000
	Methyl Isobutyl Ketone	--	6,400	6,400	--	280,000	280,000
	Methylene Bromide	--	800	800	--	35,000	35,000
	Methylene Chloride	94	480	94	66,000	21,000	21,000
	Methyl-t-butyl Ether	560	--	560	73,000	--	73,000
	Naphthalene	--	1,600	1,600	--	70,000	70,000
	n-Butylbenzene	--	4,000	4,000	--	180,000	180,000
	n-Propylbenzene	--	8,000	8,000	--	350,000	350,000
	p-isopropyltoluene	--	--	No Value	--	--	No Value
	sec-Butylbenzene	--	8,000	8,000	--	350,000	350,000
	Styrene	--	16,000	16,000	--	700,000	700,000
	tert-Butylbenzene	--	8,000	8,000	--	350,000	350,000
	Tetrachloroethylene	480	480	480	63,000	21,000	21,000
	Toluene	--	6,400	6,400	--	280,000	280,000
	trans-1,2-Dichloroethylene	--	1,600	1,600	--	70,000	70,000
	trans-1,3-Dichloropropene	--	--	No Value	--	--	No Value
	Trichloroethylene	12	40	12	2,900	1,800	1,800
	Trichlorofluoromethane	--	24,000	24,000	--	1,100,000	1,100,000
	Vinyl Chloride	0.67	240	0.67	88	11,000	88
	Xylenes, Total	--	16,000	16,000	--	700,000	700,000
PAHs	Acenaphthene	--	4,800	4,800	--	210,000	210,000
	Acenaphthylene	--	--	No Value	--	--	No Value
	Anthracene	--	24,000	24,000	--	1,100,000	1,100,000
	Benzo(ghi)perylene	--	--	No Value	--	--	No Value
	Fluoranthene	--	3,200	3,200	--	140,000	140,000
	Fluorene	--	3,200	3,200	--	140,000	140,000
	Naphthalenes, Total	--	1,600	1,600	--	70,000	70,000
	Phenanthrene	--	--	No Value	--	--	No Value
	Pyrene	--	2,400	2,400	--	110,000	110,000
	Total cPAHs [5]	0.19	24	0.19	130	1,100	130
Metals	Arsenic	0.67	24	20 [6]	88	1,100	88
	Barium	--	16,000	16,000	--	700,000	700,000
	Cadmium	--	80	80	--	3500	3,500
	Chromium (III)	--	120,000	120,000	--	5,300,000	5,300,000
	Chromium (VI)	0.38	240	0.38	260	11,000	260
	Chromium, Total	--	--	No Value	--	--	No Value
	Lead	--	--	250 [7]	--	--	1,000 [7]
	Mercury	--	--	24 [4]	--	--	1,050 [4]
	Selenium	--	400	400	--	18,000	18,000
	Silver	--	400	400	--	18,000	18,000

Table 2b: Calculation of Soil Direct Contact Screening Levels

Type	Constituent	Unrestricted Land Use Scenario			Industrial Land Use Scenario		
		Standard Method B Soil Value for Carcinogens [1] (mg/kg)	Standard Method B Soil Value for Non-carcinogens [1] (mg/kg)	Soil Direct Contact Screening Level for an Unrestricted Land Use Scenario [2] (mg/kg)	Standard Method C Soil Value for Carcinogens [1] (mg/kg)	Standard Method C Soil Value for Non-carcinogens [1] (mg/kg)	Soil Direct Contact Screening Level for an Industrial Land Use Scenario [2,3] (mg/kg)

Notes:

--: No value exists for this constituent in the Cleanup Levels and Risk Calculation (CLARC) database (Ecology 2024). No Value: A screening level cannot be calculated because no values exist in CLARC.

All values are presented as two significant figures in standard notation, except numbers greater than 100 are rounded to a whole number.

[1] Values from CLARC (Ecology 2024), unless otherwise noted.

[2] The screening level is the most stringent of the carcinogenic and non-carcinogenic values, unless otherwise noted.

[3] These screening levels are applicable for current Site soil direct contact exposures because the exposure assumptions for the current commercial and light industrial land use at the site (e.g., adult workers) are the same as the MTCA exposure assumptions for industrial properties.

[4] Default TPH-D, TPH-G, TPH-HO, and mercury direct contact values for an unrestricted land use scenario (Ecology 2001a) and an industrial land use scenario (Ecology 2001b). Site-specific TPH soil screening levels may be calculated in the future.

[5] Total cPAH screening levels were based on the toxicity of benzo(a)pyrene in accordance with WAC 173-340-708(8). Total cPAH concentrations will be calculated using MTCA toxicity equivalence factors.

[6] Adjusted to accepted soil background concentration of 20 mg/kg per WAC 173-340-740(5)(c) (see MTCA Table 740-1 footnote b).

[7] MTCA Method A soil cleanup levels for lead.

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Table 3: Calculation of Indoor Air Screening Levels

Type	Constituent	Unrestricted Land Use Scenario			Adult Commerical Worker Scenario			Indoor Air PEL for 8-Hour TWA [4] (ug/m^3)
		Standard Method B Air Value for Carcinogens [1] (ug/m^3)	Standard Method B Air Value for Non-carcinogens [1] (ug/m^3)	Indoor Air Screening Level for an Unrestricted Land Use Scenario [2,3] (ug/m^3)	Adult Commercial Worker Air Value for Carcinogens [1] (ug/m^3)	Adult Commercial Worker Air Value for Non-carcinogens [1] (ug/m^3)	Indoor Air Screening Level for an Adult Commercial Worker Scenario [2,3] (ug/m^3)	
TPH	Site-specific TPH screening level [5]	--	367	367	--	3,090	3,090	--
VOCs	1,1,1-Trichloroethane	--	2,286	2,286	--	19,467	19,467	1,909,611
	1,1,2,2-Tetrachloroethane	0.043	--	0.043	0.20	--	0.20	6,865
	1,1,2-Trichloro-1,2,2-trifluoroethane	--	2,286	2,286	--	19,467	19,467	7,663,395
	1,1,2-Trichloroethane	0.16	0.091	0.091	0.73	0.78	0.73	54,560
	1,1-Dichloroethane	1.6	--	1.6	7.3	--	7.3	404,744
	1,1-Dichloroethylene	--	91	91	--	779	779	3,965
	1,2,4-Trichlorobenzene	--	0.91	0.91	--	7.8	7.8	--
	1,2,4-Trimethylbenzene	--	27	27	--	234	234	122,894
	1,2-Dichlorobenzene	--	91	91	--	779	779	--
	1,2-Dichloroethane	0.096	3.2	0.096	0.45	27	0.45	4,049
	1,2-Dichloropropane	0.68	1.8	0.68	3.2	16	3.2	346,595
	1,3,5-Trimethylbenzene	--	27	27	--	234	234	--
	1,3-Butadiene	0.083	0.91	0.083	0.39	7.8	0.39	2,212
	1,3-Dichlorobenzene	--	--	No Value	--	--	No Value	--
	1,4-Dichlorobenzene	0.23	366	0.23	1.1	3,115	1.1	450,920
	1,4-Dioxane	0.50	14	0.50	2.3	117	2.3	90,092
	2,2,4-Trimethylpentane	--	--	No Value	--	--	No Value	--
	2-Chlorotoluene	--	--	No Value	--	--	No Value	258,855
	2-Hexanone	--	14	14	--	117	117	20,483
	2-Propanol	--	--	No Value	--	--	No Value	983,395
	3-Chloropropene	0.42	0.46	0.42	1.9	3.9	1.9	3,130
	4-Ethyltoluene	--	--	No Value	--	--	No Value	--
	Acetone	--	--	No Value	--	--	No Value	1,781,595
	Acrolein	--	0.0091	0.0091	--	0.078	0.078	229
	Benzene	0.32	14	0.32	1.5	117	1.5	3,195
	Benzyl Chloride	0.051	0.46	0.051	0.24	3.9	0.24	5,177
	Bromodichloromethane	0.068	--	0.068	0.32	--	0.32	--
	Bromoform	2.3	--	2.3	11	--	11	5,168
	Bromomethane	--	2.3	2.3	--	19	19	19,415
	Butane	--	--	No Value	--	--	No Value	1,901,677
	Carbon Disulfide	--	320	320	--	2,725	2,725	12,456
	Carbon Tetrachloride	0.42	46	0.42	1.9	389	1.9	12,582
	Chlorobenzene	--	23	23	--	195	195	345,276
	Chloroethane	--	4,571	4,571	--	38,933	38,933	2,638,446
	Chloroform	0.11	45	0.11	0.51	382	0.51	9,765
	Chloromethane	--	41	41	--	350	350	103,252
	cis-1,2-Dichloroethylene	--	18	18	--	156	156	793,047
	cis-1,3-Dichloropropene	--	--	No Value	--	--	No Value	--
	Cumene	--	183	183	--	1,557	1,557	245,787
	Cyclohexane	--	2,743	2,743	--	23,360	23,360	1,032,638
	Dibromochloromethane	--	--	No Value	--	--	No Value	--
	Dichlorodifluoromethane	--	46	46	--	389	389	4,945,194
	Ethanol	--	--	No Value	--	--	No Value	1,884,254
	Ethyl Acetate	--	32	32	--	273	273	1,441,472
	Ethylbenzene	--	457	457	--	3,893	3,893	434,192
	Ethylene Dibromide (EDB)	0.0042	4.1	0.0042	0.019	35	0.019	768
	F-114	--	--	No Value	--	--	No Value	6,990,593
	Heptane	--	183	183	--	1,557	1,557	1,639,427
	Hexachlorobutadiene	0.11	--	0.11	0.53	--	0.53	213
	Methyl Ethyl Ketone	--	2,286	2,286	--	19,467	19,467	589,857
	Methyl Isobutyl Ketone	--	1,371	1,371	--	11,680	11,680	204,826
	Methyl Methacrylate	--	320	320	--	2,725	2,725	409,489
	Methylene Chloride	66	274	66	1,168	2,336	1,168	86,840
	Methyl-t-Butyl Ether	9.6	1,371	9.6	45	11,680	45	--
	Naphthalene	0.074	1.4	0.074	0.34	12	0.34	52,421
	n-Hexane	--	320	320	--	2,725	2,725	176,237
	Nonane	--	--	No Value	--	--	No Value	1,048,671
	n-Propylbenzene	--	457	457	--	3,893	3,893	--
	Pentane	--	--	No Value	--	--	No Value	1,770,552
	Propene	--	--	No Value	--	--	No Value	--
	Styrene	--	457	457	--	3,893	3,893	212,986
	t-Butyl Alcohol	--	--	No Value	--	--	No Value	303,162
	Tetrachloroethylene	9.6	18	9.6	45	156	45	169,560
	Tetrahydrofuran	--	914	914	--	7,787	7,787	589,857
	Toluene	--	2,286	2,286	--	19,467	19,467	376,851
	trans-1,2-Dichloroethylene	--	18	18	--	156	156	793,047
	trans-1,3-Dichloropropene	--	--	No Value	--	--	No Value	--
	Trichloroethylene	0.33	0.91	0.33	2.8	7.5	2.8	268,712
	Trichlorofluoromethane	--	320	320	--	2,725	2,725	--
	Vinyl Acetate	--	91	91	--	779	779	35,211
	Vinyl Bromide	0.17	1.4	0.17	0.78	12	0.78	21,871
	Vinyl Chloride	0.28	46	0.28	1.3	389	1.3	2,556
	Xylenes, Total	--	46	46	--	389	389	434,192

Notes:

--: No value exists for this constituent in the Cleanup Levels and Risk Calculation (CLARC) database (Ecology 2024) or WAC 296-841-20025. No Value: A screening level cannot be calculated because no values exist in CLARC.

All screening levels are presented as two significant figures in standard notation, with the exception of the PELs (which are rounded to the nearest whole number).

All values are presented as two significant figures in standard notation, except numbers greater than 100 are rounded to a whole number.

[1] Values from CLARC (Ecology 2024), unless otherwise noted.

[2] The screening level is the most stringent of the carcinogenic and non-carcinogenic values, unless otherwise noted.

[3] Actual and appropriate practical quantitation limits (PQLs) for some constituents exceed screening levels (e.g., some screening levels are lower than achievable PQLs for approved analytical methods, some PQLs are elevated due to necessary lab dilutions to satisfy lab quality control standards). For current screening purposes, PQL adjustments were not made to these screening levels. Accordingly, a non-detect result with a PQL greater than the screening level was not considered a screening level exceedance. Pursuant to WAC 173-340-750(5)(c), PQL adjustments will be made as necessary when constituents of concern and cleanup levels are defined in the future. In addition, some detected constituent results will need to be assessed relative to ambient air background and/or indoor air background.

[4] The PELs are the published values in WAC 296-841-20025. The values were converted to ug/m^3 using the following formula: concentration in ug/m^3 = concentration in ppbv * molecular weight / 24.45.

[5] See Table 5 for determination of site-specific TPH indoor air screening levels for the two exposure scenarios.

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Table 4: Calculation of Sub-Slab Soil Gas Screening Levels

Type	Constituent	Unrestricted Land Use Scenario			Adult Commercial Worker Scenario		
		Method B Sub-Slab Soil Gas Value for Carcinogens [1] (ug/m^3)	Method B Sub-Slab Soil Gas Value for Non-carcinogens [1] (ug/m^3)	Sub-Slab Soil Gas Screening Level for an Unrestricted Land Use Scenario [2,3] (ug/m^3)	Adult Commercial Worker Sub-Slab Soil Gas Value for Carcinogens [1] (ug/m^3)	Adult Commercial Worker Sub-Slab Soil Gas Value for Non-carcinogens [1] (ug/m^3)	Sub-Slab Soil Gas Screening Level for an Adult Commercial Worker Scenario [2,3] (ug/m^3)
TPH	Site-specific TPH screening level [4]	--	12,000	12,000	--	100,000	100,000
VOCs	1,1,1-Trichloroethane	--	76,000	76,000	--	650,000	650,000
	1,1,2,2-Tetrachloroethane	1.4	--	1.4	6.7	--	6.7
	1,1,2-Trichloro-1,2,2-trifluoroethane	--	76,000	76,000	--	650,000	650,000
	1,1,2-Trichloroethane	5.2	3.0	3.0	24	26	24
	1,1-Dichloroethane	52	--	52	240	--	240
	1,1-Dichloroethylene	--	3,000	3,000	--	26,000	26,000
	1,2,4-Trichlorobenzene	--	30	30	--	260	260
	1,2,4-Trimethylbenzene	--	910	910	--	7,800	7,800
	1,2-Dichlorobenzene	--	3,000	3,000	--	26,000	26,000
	1,2-Dichloroethane	3.2	110	3.2	15	910	15
	1,2-Dichloropropane	23	61	23	110	520	110
	1,3,5-Trimethylbenzene	--	910	910	--	7,800	7,800
	1,3-Butadiene	2.8	30	2.8	13	260	13
	1,3-Dichlorobenzene	--	--	No Value	--	--	No Value
	1,4-Dichlorobenzene	7.6	12,000	7.6	35	100,000	35
	1,4-Dioxane	17	460	17	78	3,900	78
	2,2,4-Trimethylpentane	--	--	No Value	--	--	No Value
	2-Chlorotoluene	--	--	No Value	--	--	No Value
	2-Hexanone	--	460	460	--	3,900	3,900
	2-Propanol	--	--	No Value	--	--	No Value
	3-Chloropropene	14	15	14	65	130	65
	4-Ethyltoluene	--	--	No Value	--	--	No Value
	Acetone	--	--	No Value	--	--	No Value
	Acrolein	--	0.30	0.30	--	2.6	2.6
	Benzene	11	460	11	50	3,900	50
	Benzyl Chloride	1.7	15	1.7	7.9	130	7.9
	Bromodichloromethane	2.3	--	2.3	11	--	11
	Bromoform	76	--	76	350	--	350
	Bromomethane	--	76	76	--	650	650
	Butane	--	--	No Value	--	--	No Value
	Carbon Disulfide	--	11,000	11,000	--	91,000	91,000
	Carbon Tetrachloride	14	1,500	14	65	13,000	65
	Chlorobenzene	--	760	760	--	6,500	6,500
	Chloroethane	--	150,000	150,000	--	1,300,000	1,300,000
	Chloroform	3.6	1,500	3.6	17	13,000	17
	Chloromethane	--	1,400	1,400	--	12,000	12,000
	cis-1,2-Dichloroethylene	--	610	610	--	5,200	5,200
	cis-1,3-Dichloropropene	--	--	No Value	--	--	No Value
	Cumene	--	6,100	6,100	--	52,000	52,000
	Cyclohexane	--	91,000	91,000	--	780,000	780,000
	Dibromochloromethane	--	--	No Value	--	--	No Value
	Dichlorodifluoromethane	--	1,500	1,500	--	13,000	13,000
	Ethanol	--	--	No Value	--	--	No Value
	Ethyl Acetate	--	1,100	1,100	--	9,100	9,100
	Ethylbenzene	--	15,000	15,000	--	130,000	130,000
	Ethylene Dibromide (EDB)	0.14	140	0.14	0.65	1,200	0.65
	F-114	--	--	No Value	--	--	No Value
	Heptane	--	6,100	6,100	--	52,000	52,000
	Hexachlorobutadiene	3.8	--	3.8	18	--	18
	Methyl Ethyl Ketone	--	76,000	76,000	--	650,000	650,000
	Methyl Isobutyl Ketone	--	46,000	46,000	--	390,000	390,000
	Methyl Methacrylate	--	11,000	11,000	--	91,000	91,000
	Methylene Chloride	2,200	9,100	2,200	39,000	78,000	39,000
	Methyl-t-Butyl Ether	320	46,000	320	1,500	390,000	1,500
	Naphthalene	2.5	46	2.5	11	390	11
	n-Hexane	--	11,000	11,000	--	91,000	91,000
	Nonane	--	--	No Value	--	--	No Value
	n-Propylbenzene	--	15,000	15,000	--	130,000	130,000
	Pentane	--	--	No Value	--	--	No Value
	Propene	--	--	No Value	--	--	No Value
	Styrene	--	15,000	15,000	--	130,000	130,000
	t-Butyl Alcohol	--	--	No Value	--	--	No Value
	Tetrachloroethylene	320	610	320	1,500	5,200	1,500
	Tetrahydrofuran	--	30,000	30,000	--	260,000	260,000
	Toluene	--	76,000	76,000	--	650,000	650,000
	trans-1,2-Dichloroethylene	--	610	610	--	5,200	5,200
	trans-1,3-Dichloropropene	--	--	No Value	--	--	No Value
	Trichloroethylene	11	30	11	95	250	95
	Trichlorofluoromethane	--	11,000	11,000	--	91,000	91,000
	Vinyl Acetate	--	3,000	3,000	--	26,000	26,000
	Vinyl Bromide	5.6	46	5.6	26	390	26
	Vinyl Chloride	9.5	1,500	9.5	44	13,000	44
	Xylenes, Total	--	1,500	1,500	--	13,000	13,000

Notes:

--: No value exists for this constituent in the Cleanup Levels and Risk Calculation (CLARC) database (Ecology 2024). No Value: A screening level cannot be calculated because no values exist in CLARC.

All values are presented as two significant figures in standard notation, except numbers greater than 100 are rounded to a whole number.

[1] Values from CLARC (Ecology 2024), unless otherwise noted.

[2] The screening level is the most stringent of the carcinogenic and non-carcinogenic values, unless otherwise noted.

[3] Actual and appropriate practical quantitation limits (PQLs) for some constituents exceed screening levels (e.g., some screening levels are lower than achievable PQLs for approved analytical methods, some PQLs are elevated due to necessary lab dilutions to satisfy lab quality control standards). For current screening purposes, PQL adjustments were not made to these screening levels. Accordingly, a non-detect result with a PQL greater than the screening level was not considered a screening level exceedance. Pursuant to WAC 173-340-750(5)(c), PQL adjustments will be made as necessary when constituents of concern and cleanup levels are defined in the future.

[4] The site-specific TPH screening levels for sub-slab soil gas are the site-specific TPH indoor air screening levels divided by Ecology's default attenuation factor of 0.03 (Ecology 2022b), rounded to two significant figures.

Table 5: Calculation of Total TPH Concentrations for VI Samples and Calculation of Site-Specific TPH Indoor Air SLs

Sample Media	Sample ID	TPH Component [1]	Measured Concentration in Sample [1] (µg/m3)	Fraction of Total TPH Concentration [1,2] (Fi)	Method B TPH Indoor Air SL Calculations [2,3]		TPH Indoor Air SL Calculations for Adult Commercial Worker [2,4]	
					Cleanup Level Component for Each Individual TPH Component (CULi) (µg/m3)	Fi / CULi	Cleanup Level Component for Each Individual TPH Component (CULi) (µg/m3)	Fi / CULi
Soil Gas	SG1 [5]	Aliphatics EC5-8	3,400,000	0.9973	2,720	3.67E-04	22,875	4.36E-05
		Aliphatics EC9-12	4,700	0.0014	46.4	2.97E-05	390	3.53E-06
		Aromatics EC9-10	<950	0.0000	182	0.00E+00	1,531	0.00E+00
		Benzene	4,600	0.0013	13.7	9.85E-05	115	1.17E-05
		Toluene	<720	0.0000	2,240	0.00E+00	18,838	0.00E+00
		Ethylbenzene	<17	0.0000	458	0.00E+00	3,852	0.00E+00
		Xylenes	<50	0.0000	46.4	0.00E+00	390	0.00E+00
		Naphthalene	<2.2	0.0000	1.38	0.00E+00	12	0.00E+00
		Total TPH Concentration	**3,409,300**	1.0	**2,021**		**16,995**	
	SG2	Aliphatics EC5-8	16,000	0.8889	2,720	3.27E-04	22,875	3.89E-05
		Aliphatics EC9-12	2,000	0.1111	46.4	2.39E-03	390	2.85E-04
		Aromatics EC9-10	<1000	0.0000	182	0.00E+00	1,531	0.00E+00
		Benzene	<13	0.0000	13.7	0.00E+00	115	0.00E+00
		Toluene	<750	0.0000	2,240	0.00E+00	18,838	0.00E+00
		Ethylbenzene	<17	0.0000	458	0.00E+00	3,852	0.00E+00
		Xylenes	<52	0.0000	46.4	0.00E+00	390	0.00E+00
		Naphthalene	<2.2	0.0000	1.38	0.00E+00	12	0.00E+00
		Total TPH Concentration	**18,000**	1.0	**367**		**3,090**	
	SG3	Aliphatics EC5-8	8,300	0.9984	2,720	3.67E-04	22,875	4.36E-05
		Aliphatics EC9-12	<1400	0.0000	46.4	0.00E+00	390	0.00E+00
		Aromatics EC9-10	<1000	0.0000	182	0.00E+00	1,531	0.00E+00
		Benzene	13	0.0016	13.7	1.14E-04	115	1.36E-05
		Toluene	<750	0.0000	2,240	0.00E+00	18,838	0.00E+00
		Ethylbenzene	<17	0.0000	458	0.00E+00	3,852	0.00E+00
		Xylenes	<52	0.0000	46.4	0.00E+00	390	0.00E+00
		Naphthalene	<2.2	0.0000	1.38	0.00E+00	12	0.00E+00
		Total TPH Concentration	**8,313**	1.0	**2,078**		**17,476**	
	SG4	Aliphatics EC5-8	3,200	0.5985	2,720	2.20E-04	22,875	2.62E-05
		Aliphatics EC9-12	2,100	0.3927	46.4	8.46E-03	390	1.01E-03
		Aromatics EC9-10	<1000	0.0000	182	0.00E+00	1,531	0.00E+00
		Benzene	<13	0.0000	13.7	0.00E+00	115	0.00E+00
		Toluene	<790	0.0000	2,240	0.00E+00	18,838	0.00E+00
		Ethylbenzene	<18	0.0000	458	0.00E+00	3,852	0.00E+00
		Xylenes	47	0.0000	46.4	0.00E+00	390	0.00E+00
		Naphthalene	<2.4	0.0000	1.38	0.00E+00	12	0.00E+00
		Total TPH Concentration	**5,347**	1.0	**115**		**968**	
Indoor Air	IA1 [5]	Aliphatics EC5-8	245	0.2774	2,720	1.02E-04	22,875	1.21E-05
		Aliphatics EC9-12	630	0.7133	46.4	1.54E-02	390	1.83E-03
		Aromatics EC9-10	<25	0.0000	182	0.00E+00	1,531	0.00E+00
		Benzene	0.70	0.0008	13.7	5.78E-05	115	6.88E-06
		Toluene	<19	0.0000	2,240	0.00E+00	18,838	0.00E+00
		Ethylbenzene	1.1	0.0012	458	2.72E-06	3,852	3.23E-07
		Xylenes	5.9	0.0067	46.4	1.44E-04	390	1.71E-05
		Naphthalene	0.58	0.0007	1.38	4.76E-04	12	5.66E-05
		Total TPH Concentration	**883**	1.0	**62**		**521**	
	IA2	Aliphatics EC5-8	230	0.1404	2,720	5.16E-05	22,875	6.14E-06
		Aliphatics EC9-12	1,400	0.8548	46.4	1.84E-02	390	2.19E-03
		Aromatics EC9-10	<25	0.0000	182	0.00E+00	1,531	0.00E+00
		Benzene	0.73	0.0004	13.7	3.25E-05	115	3.87E-06
		Toluene	<19	0.0000	2,240	0.00E+00	18,838	0.00E+00
		Ethylbenzene	1.0	0.0006	458	1.33E-06	3,852	1.59E-07
		Xylenes	5.6	0.0034	46.4	7.37E-05	390	8.76E-06
		Naphthalene	0.51	0.0003	1.38	2.26E-04	12	2.68E-05
		Total TPH Concentration	**1,638**	1.0	**53**		**447**	
	IA3	Aliphatics EC5-8	290	0.7239	2,720	2.66E-04	22,875	3.16E-05
		Aliphatics EC9-12	100	0.2496	46.4	5.38E-03	390	6.40E-04
		Aromatics EC9-10	<25	0.0000	182	0.00E+00	1,531	0.00E+00
		Benzene	0.60	0.0015	13.7	1.09E-04	115	1.30E-05
		Toluene	<19	0.0000	2,240	0.00E+00	18,838	0.00E+00
		Ethylbenzene	1.5	0.0037	458	8.18E-06	3,852	9.72E-07
		Xylenes	8.1	0.0202	46.4	4.36E-04	390	5.18E-05
		Naphthalene	0.40	0.0010	1.38	7.24E-04	12	8.60E-05
		Total TPH Concentration	**401**	1.0	**144**		**1,215**	
	IA4	Aliphatics EC5-8	950	0.4425	2,720	1.63E-04	22,875	1.93E-05
		Aliphatics EC9-12	1,100	0.5124	46.4	1.10E-02	390	1.31E-03
		Aromatics EC9-10	33	0.0154	182	8.45E-05	1,531	1.00E-05
		Benzene	1.3	0.0006	13.7	4.42E-05	115	5.26E-06
		Toluene	<19	0.0000	2,240	0.00E+00	18,838	0.00E+00
		Ethylbenzene	8.9	0.0041	458	9.05E-06	3,852	1.08E-06
		Xylenes	53	0.0247	46.4	5.32E-04	390	6.33E-05
		Naphthalene	0.64	0.0003	1.38	2.16E-04	12	2.57E-05
		Total TPH Concentration	**2,147**	1.0	**83**		**696**	
Ambient Air	AA1	Aliphatics EC5-8	48	0.4892	2,720	1.80E-04	22,875	2.14E-05
		Aliphatics EC9-12	47	0.4790	46.4	1.03E-02	390	1.23E-03
		Aromatics EC9-10	<25	0.0000	182	0.00E+00	1,531	0.00E+00
		Benzene	<0.32	0.0000	13.7	0.00E+00	115	0.00E+00
		Toluene	<19	0.0000	2,240	0.00E+00	18,838	0.00E+00
		Ethylbenzene	0.50	0.0051	458	1.11E-05	3,852	1.32E-06
		Xylenes	2.4	0.0245	46.4	5.27E-04	390	6.27E-05
		Naphthalene	0.22	0.0022	1.38	1.62E-03	12	1.93E-04
		Total TPH Concentration	**98**	1.0	**79**		**664**	
Representative TPH Indoor Air SLs (ug/m3)					**367**		**3,090**	

Table 5: Calculation of Total TPH Concentrations for VI Samples and Calculation of Site-Specific TPH Indoor Air SLs

Rationale for Representative TPH Indoor Air SL: Although SG1 likely has the most representative fractional composition for VI conditions due to its location within the area of highest gasoline soil and groundwater concentrations (plus substantially less indoor air and ambient air background interferences due to the high TPH soil gas concentration), the lowest of the potential TPH indoor air SLs calculated with the fractional compositions for SG1 through SG3 were used to develop the resulting indoor air SLs. The fractional composition of SG4 and IA1 through IA4 are not representative of VI conditions due to the influence of ambient air and indoor air background in these samples. An extremely large number of vehicles containing gasoline were present in close proximity to the sampling locations at this auto dealership site (including vehicles being actively serviced within the active auto maintenance bay where SG4 and IA4 were collected), and it was not practicable to remove gasoline sources (e.g., vehicles) prior to or during VI sampling. Indicators of substantial indoor air and/or ambient air background influence in the IA1 through IA4 and SG4 samples include (1) the 90th percentile TPH indoor air background concentration (per Table E-1 in Ecology 2022b) is 594 ug/m3 (which may underestimate TPH background at an active auto dealership), (2) TPH and BTEXN concentrations in IA1 were similar to or less than TPH and BTEXN concentrations in IA2 through IA4 even though IA1 was directly above the subsurface gasoline source area, IA2 was slightly beyond the edge of the subsurface gasoline source area, and IA3 and IA4 were outside area of known areas of gasoline soil and groundwater contamination, (3) the soil gas-to-indoor air attenuation factor for SG2/IA2, SG3/IA3, and SG4/IA4 were substantially higher than typical TPH VI conditions, and (4) the fractional composition of IA1 through IA4, SG4, and AA1 had substantially higher proportions of aliphatics EC9-12 than SG1 through SG3. The indoor air SLs will be revisited (and revised as necessary) once one or more future VI sampling events are conducted following completion of the IA.

Notes:

BTEXN: benzene, toluene, ethylbenzene, xylenes, and naphthalene; SL: screening level; VI: vapor intrusion

Blue highlighted cells are the total TPH concentrations utilized in the IAWP for reporting TPH soil gas, indoor air, and ambient air sample concentrations.

Green highlighted cells are potential TPH indoor air SLs based on the fractional composition of TPH components in each sample.

Yellow highlighted cells are conservative indoor air TPH SLs based on samples that are representative for VI conditions and not skewed by ambient air and indoor air background.

(1) Aliphatics EC5-8, aliphatics EC9-12 and aromatics EC9-10, and BTEXN are the TPH components used to calculate a total TPH concentration for each soil gas, indoor air, and ambient air sample per Section E-8 in Appendix E of Ecology's VI guidance (Ecology 2022b). The total TPH concentration for a given sample is the sum of concentrations for these eight components. Per Ecology's VI guidance (i.e., Table E-7), non-detect results are shown as "<" and are assumed to be zero for the purpose of calculating the fraction of the total TPH concentration (Ecology 2022b).

(2) In accordance with Section E-8 in Appendix E of Ecology's VI guidance (Ecology 2022b), a non-carcinogenic TPH indoor air SL for a given exposure scenario is calculated using the compositional fraction for each of the eight TPH components (Fi) and the corresponding cleanup level component for each individual TPH component (CULi) in a sample that has a compositional fractions representative of VI conditions. As shown in Ecology's VI guidance (Ecology 2022b), the potential TPH indoor air SL based on the fractions in a given sample equals 1 divided by the sum of Fi/CULi for the eight TPH components.

(3) The Method B calculations are the default exposure assumptions for an unrestricted land use scenario (i.e., child receptor). See Tables E-5 and E-6 in Ecology's VI guidance (Ecology 2022b).

(4) Ecology's acceptable adult commercial worker exposure assumption adjustments are in Section 4.4 of Ecology's VI guidance (Ecology 2022b). Per Ecology guidance, the average body weight was changed from 16 kg to 70 kg, the breathing rate was changed from 10 m3/day to 20 m3/day, and the exposure frequency was changed from 1.0 to 0.26.

(5) Duplicate sample collected. The data reduction rules for duplicate samples were: (a) if both samples had a detected result, then the average concentration was used, (b) if neither sample had a detected result, then the lower reporting limit was used, and (c) if only one of the two samples had a detected result, then the detected concentration was used.

Appendix F

PIONEER TECHNOLOGIES CORPORATION (PTC)
FIELD CHECKLIST

Project/Task Name: Sunset Methane Eval. Site Location: Auburn WA

Requested By / Date: TB/JH 9/14/20 Work Deadline: 9/16/20

SERVICES REQUESTED	COMPLETED
- order GEM2000 + 4 Gas meter w/ 0.01% detection	☒ YES ☐ NO
- GPRS utility clearance	☒ YES ☐ NO
- Second Hammer Drill	☒ YES ☐ NO
- Screen ambient air for methane	☒ YES ☐ NO
- screen cracks and vents / preferential pathways for methane	☒ YES ☐ NO
- drill interior + exterior to evaluate methane in Sub-Slab Soil gas	☒ YES ☐ NO
- patch holes	☒ YES ☐ NO
- return equipment	☒ YES ☐ NO
	☐ YES ☐ NO
	☐ YES ☐ NO
	☐ YES ☐ NO
	☐ YES ☐ NO

ADDITIONAL STANDARD INSTRUCTIONS	COMPLETED		COMPLETED
☐ Review Docs:	☐ YES ☐ NO	☒ Health & Safety Meeting	☒ YES ☐ NO
☒ Agency NOI / GPRS Utility Locate / Concrete Coring	☒ YES ☐ NO	☐ Call PM from Site	☐ YES ☐ NO
☒ Coordinate Access: Justin Mathun	☒ YES ☐ NO	☐ Draw Site Map	☐ YES ☐ NO
☒ Coordinate Sub / Equip: Equipco	☒ YES ☐ NO	☐ Cuttings / Purge Water Characterization & Disposal	
☒ Purchase / Rent Equip: Hammer Drill/GEM	☒ YES ☐ NO	☐ Potential HW	☐ YES ☐ NO
☒ Client/Agency Coordination: Kim Seeley	☒ YES ☐ NO	☐ Non-Haz	☐ YES ☐ NO
☒ Calibrate Equipment: Equipco	☒ YES ☐ NO	☐ Background	☐ YES ☐ NO

SAMPLING REQUIREMENTS

☒ Field Testing: methane, differential pressure, O_2, CO_2

☐ Lab Testing: Laboratory:

☐ Lab Testing: Laboratory:

☐ Lab Testing: Laboratory:

FIELD SUPPLIES NEEDED

☒ Site Map ☒ Camera ☐ Survey Equip / GPS ☒ Vehicle

☒ Std Field Equip (keys, forms, SAP, HASP, PPE, decon, tools)

☐ Drilling Equip (PID, references, knife, baggies, tape)

☐ Soil Equip (SS bowls, spoon/shovel, hand auger, pick, sieves)

☐ GWM (pump, tubing, gen., compres., bailers, rope/string, PDB)

☐ Pump / Slug Test Equip (GWM Equip, slug, stopwatch)

☐ Water Level Indicator / Interface Probe

☐ Water Quality Meter ☐ Field Test Kits

☐ Sample Kit / Cooler / COC / Ice

☐ IDW: ☐ Drums ☐ 5-gal buckets

☒ Other: GEM 2000, Hammer Drill, Dust Pan

☐ Other:

Field Log: Methane Sampling

Site Name: Sunset Auburn

Instrument: GEM 2000

Date: 9/16/2020

Sampler Name: JH and TB

Weather: Smoggy/ cloudy 70°F

Comments:

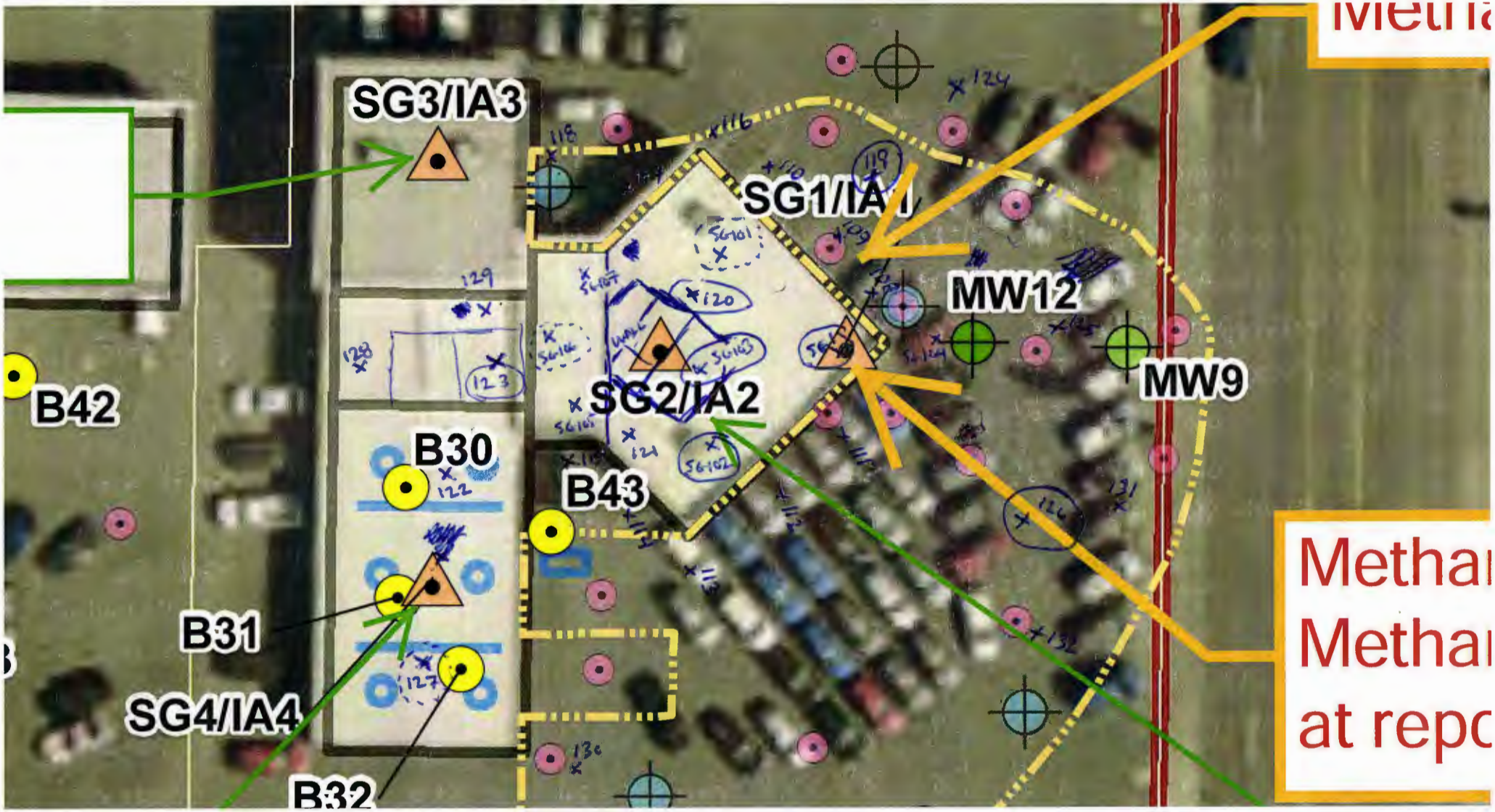
Barometric Pressure (Pa or ATM): 29.88 " Hg (relative " Hg)

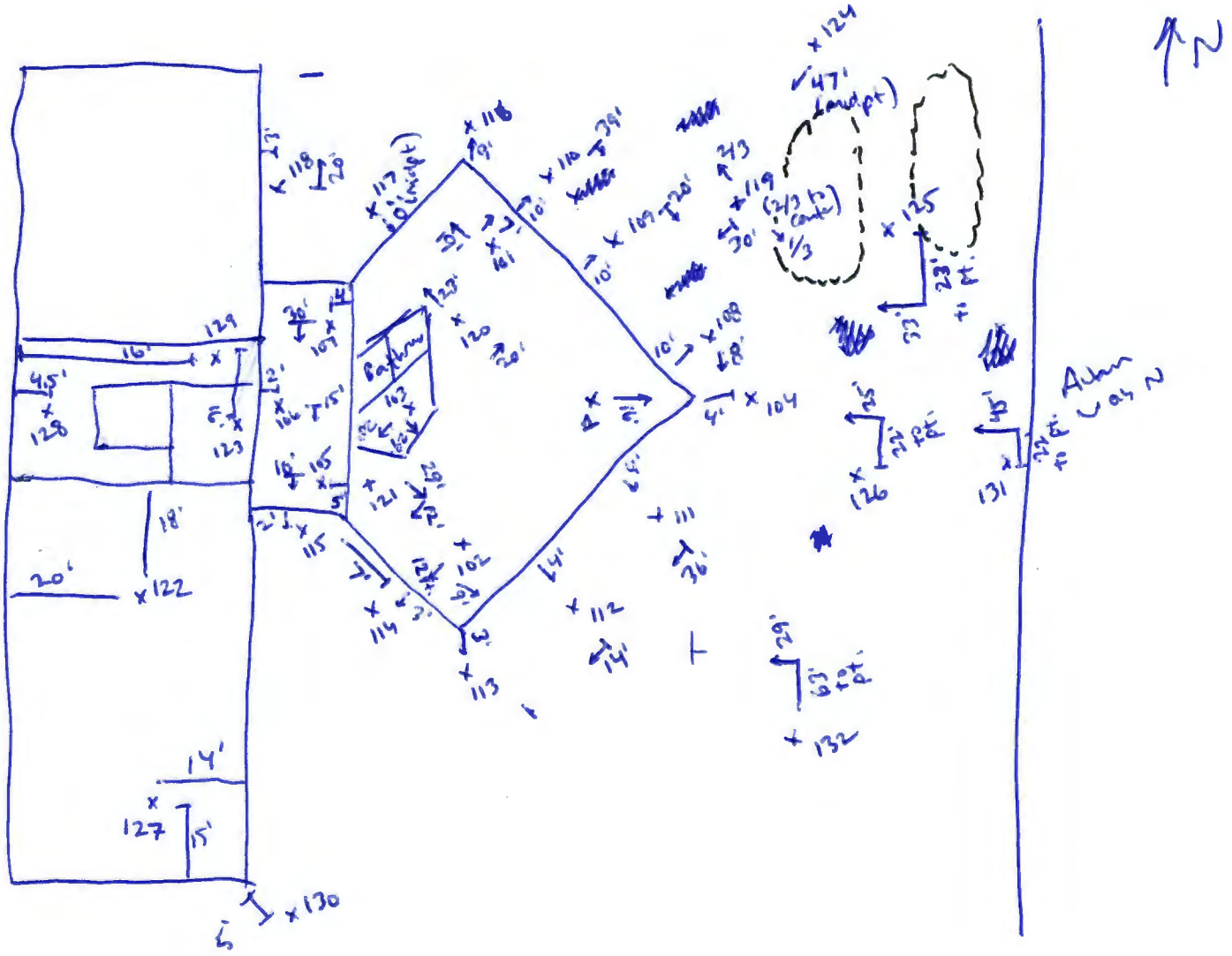
Samp_No	(LFG) During ~~Location~~ drilling	Time	Pressure (Pascals or ATM)	Temp (°F)	Peak CH4 (%)	CO_2 (%)	O_2 (%)	Balance (%)	System CH4 Field Observations
SG1	28%	1048	-0.00	70	>>98%	13.7%	0.0	0.0	>> (86%) after 10 min
SG101	0.0%	1052	-0.00	70°	0.3%	4.7	6.6	88.3	0.0 after 15 seconds
SG102	6.3%	1040	-0.00	70°	>>98%	10.2	0.0	0.0	>> (89%) after 6 min
SG103	4.5%	1031	-0.00	70°	>>98%	13%	0.0	0.0	>> (87%) = didn't go down after 10 minutes
SG104	0.0%	1142	-0.04	70°	0.0	0.3	20.6	79.1	0.0
SG~~105~~ 167	0.0%	1824	-0.00	70°	0.0%	0.6	16.0	83.4	0.0
SG106	0.0%	1020	-0.00	70°	0.3%	0.9	13.5%	85.5	0.0% - after 20 seconds
SG ~~105~~ 105	0.0%	1022	-0.00	70°	0.0%	0.0%	13.8	86.2%	0.0%
SG110	0.0	1137	-0.04	70°	0.0	0.3	20.8	78.8	0.0%
SG109	0.0	1140	-0.04	70°	0.0	0.1	21.0	78.8	0.0%
SG108	0.0	1145	-0.04	70°	0.0	0.0	20.9	79.1	0.0
SG111	0.0	1150	-0.04	74°	0.0	0.3	20.5	79.2	0.0
SG112	0.0	1153	-0.04	74°	0.0	0.1	20.7	79.2	0.0
SG113	0.0	1155	-0.04	74°	0.0	0.1	20.6	79.1	0.0
SG114	0.0	1157	-0.04	74°	0.0	0.1	20.7	79.2	0.0
SG115	0.0	1330	-0.00	74°	0.0	0.1	20.9	79.0	0.0

Field Log: Methane Sampling

Site Name: Sunset Auburn
Instrument: GEM 2000
Date: 9/16/2020
Sampler Name: JH and TB
Weather: 75° SMOGGY
Comments:
Barometric Pressure (Pa or ATM): 29.84 " Hg

Samp_No	Dump Drilly Location	Time	Pressure (Pascals or ATM)	"Hg Temp (°F)	Peak CH4 (%)	CO_2 (%)	O_2 (%)	Balance (%)	Sustained CH_4 Field Observations
SG116	6.0	1335	-0.00	75°	0.0	5.3	20.8	78.9	0.0
SG117	0.0	1337	-0.00	↓	0.0	1.3	19.6	79.1	0.0
SG118	0.0	1339	- 0.00		0.0	0.1	21.0	78.9	0.0
SG119	0.0	1344	- 0.00		99.9%	4.6	3.7%	0.9%	91.0% after 11 minutes purge
SG120	4.5%	1350	+0.00	↓	39.1	9.7	0.7	56.9%	32.2% after 8 minutes
SG121	0.0	1352	+0.00		0.0	3.9	12.5	83.3	0.0
SG122	0.0	1355	+0.00		0.0	8.4	1.9	89.4	0.0
SG123	0.0	1359	+0.00	↓	47.1	14.5	0.0	78.4	[redacted] after 8 min
SG124	0.0	1505	+0.02	75°	0.0	0.1	20.5	79.2	0.0
SG125	0.0	1507	+0.02		0.0	0.1	20.6	79.2	0.0
SG126	0.0	1515	+0.02		>>98%	6.2	0.0	0.0 >(93.8)	after 10 minutes
SG127	0.0	1525	+0.02		2.8	11.6	0.0	85.4	2.7 after 8 min
SG128	0.0	1528	+0.02		0.0	2.4	11.7	85.7	0.0
SG129	0.0	1530	+0.02	↓	0.0	8.3	4.4	87.3	0.0
SG130	0.0	1625	+0.04		0.0	1.2	18.2	80.6	0.0
SG131	0.0	1615	+0.04		0.0	0.3	3.1	96.6	0.0
SG132	0.0	1619	+0.04	↓	0.0	0.2	19.7	80.0	0.0


SG3/IA3
SG1/IA1
MW12
MW9
B42
B30
SG2/IA2
B43
B31
SG4/IA4
B32
Methan
Methan
at repo


N
47' Long pt
(2/3 to center)
1/3
Baptism
Adm
Log 2

ALL IA & AA READINGS WERE COLLECTED 0-2 INCHES ABOVE GROUND, UNLESS OTHERWISE NOTED

Field Log: Methane Sampling

THERMOSTAT IN DIAMOND SHAPED BUILDING APPEARS TO BE ON AND OPERATING AT SETTINGS APPLICABLE FOR THE SEASON

PACE 1 OF 2 OF IA & AA READINGS

PIONEER TECHNOLOGIES CORPORATION

Site Name: Sunset Auburn | Instrument: GEM 2000

Date: 9/16/2020 | Sampler Name: JH and TB

Weather: SMOKY FROM FIRES | Comments: IA & AA READINGS W/ RKI GX-6000 → DETECTION LIMIT (0.01%) IS 100 ppm

Barometric Pressure (Pa or ATM): SEE GEM RESULTS

Samp ID	Samp_No	MAX City (ppm)	LOCATION NOTE Location	Samp ID Time	MAX City (ppm) Pressure (Pascals or ATM)	LOCATION NOTE Temp (°F)	Samp ID CH4 (%)	MAX City (ppm) CO (%)	LOCATION NOTE O2 (%)	Samp ID Balance (%)	MAX City (ppm) Field Observations	LOCATION NOTE
AA-101	AA-101	1200 (6.0% ON GEM)	TB SUBARU EXHAUST	IA-114 (9:26 AM)	0	AROUND VAPOR PIN	IA-127 (10 AM)	0	NEAR FLOOR @ DOOR	AA-109 (11:00)	0	AROUND MW-3 SEAL
IA-101	IA-101	100	BEAM IN EASTERN CORNER OF ◇	IA-115	0	AROUND VAPOR PIN	IA-128	0	E FLOOR CRACK	AA-110	0	CRACK NEAR E ◇
IA-101 AFTER RECHECK 2 MINUTES	0	SAME AS AB 16	IA-116	0	CRACK/ JOINT	IA-129	0	W FLOOR CRACK	AA-111	0	CRACKS AROUND FLOOR BOARD	
IA-102	0	CRACK IN MIDDLE PART OF ◇	IA-117	0	AROUND VAPOR PIN	IA-130	0	IN N TRENCH DRAIN	AA-112	0	AROUND MW-7 SEAL	
IA-103	100	BEAM IN S CORNER OF ◇	IA-118	0	NEAR FLOOR IN OFFICE/STORAGE	IA-131	0	IN S TRENCH DRAIN	AA-113	0	AROUND MW-11 SEAL	
IA-104	100	BEAM IN SW ◇	IA-119	0	NEAR FLOOR IN ◇ W/ OFFICE DOOR	IA-132	1900	IN CAR EXHAUST IN SHOP	AA-114	0 IN	W STORM CATCH BASIN	
AA-102	0	OUTSIDE NW DOOR @ BASEMENT AT TOP CORNER OF	IA-120	0	NEAR DOOR THRESHOLD (LESS RAISED FLOOR)	AA-103	0	IN UTILITY VAULT HOLE	AA-115	0 IN	CENTER STORM CATCH BASIN	
IA-105	0	CRACK IN S PART OF ◇				AA-104	0	PGE GAS METER OPERATING	AA-116	0 IN	E STORM CATCH BASIN	
IA-106	0	BEAM IN NE WALL OF ◇	IA-121	0	UNDER SINK @ UTILITY PENETRATION	AA-105	0	INSIDE OF UTILITY VAULT	AA-117	0	SIGNIFICANT CRACKS (DOWN TO SOIL)	
IA-107	0	BEAM IN N OF ◇	IA-122	0	NO FLOORING IN SERVICE/BROOM CLOSET			VAULT	AA-118	200	@ BREATHING HEIGHT (NOTICED WHILE WALKING)	
SG-1 (SAME HOLE AS JULY 2020)	> 5000 (MAX LIMIT)	PROBE A FEW INCHES INTO HOLE	IA-123	0	FLOOR IN PAINTER STORAGE CLOSET	AA-106 (10:15)	100	CRUSHED ROCK AROUND BLDG	AA-119	100 INSTRUMENT METER	AROUND MW-4 SEAL (AFTER LETTING WATER TO BAILED)	
IA-108	0	AROUND E TOILET IN ◇	SG-101	BRIEF PEAK OF 300 THEN DOWN TO 0	FEW INCHES INTO DRILLED SG HOLE	IA-133 (10:45)	0	AROUND SG-102 VENT PIN	AA-120	0	AROUND MW-6 SEAL	
IA-109	0	AROUND NE @ UTILITY PENETRATION UNDER SINK IN ◇				IA-134	0	SHOP TOILET	AA-119 RETEST	0		
IA-110	0	UNDER SW SINK IN ◇ @ UTILITY PENETRATION	IA-124	0	AROUND TOILET PENETRATION	IA-135	0	SHOP BATH SINK PENETRATION	AA-118 RETEST	0		
IA-111	0	AROUND W TOILET IN ◇	IA-125	0	UNDER SINK PENETRATION	AA-107	0	GARAGE AT E ◇	AA-121	0	STORM CATCH BASIN	
IA-112	0	CRACK OUTSIDE ◇ BATHROOM	IA-126	0	NEAR FLOOR OF FILE CABINET	AA-108 (10:59)	0	GARAGE NEAR JULY 2020 AA-1 SAMPLE	AA-122 (11:40)	0	AROUND FIRE HYDRANT	
IA-113	0	CO-LOCATED W/ JULY 2020 IA-01, BUT @ GROUND LEVEL AROUND VAPOR PIN	(10 AM)		(1.5" OF RAISED FLOOR)							

9:26 AM

9:26 AM

Field Log: Methane Sampling

PTC PIONEER TECHNOLOGIES CORPORATION

OR IA/AA READINGS THEN SG READINGS WITH MORE SENSITIVE METER

Site Name: Sunset Auburn

Instrument: GEM 2000

Date: 9/16/2020

Sampler Name: JH and TB

Weather:

Comments: RICI 6X-6000

Barometric Pressure (Pa or ATM):

Samp_No	Location ~~Notes~~	~~Time~~ MAX CH4 (ppm)	Pressure (Pascals or ATM)	Temp (°F)	~~SG Vapor Check~~	CO (%)	O_2 (%)	~~Balance Gas~~ MAX CH4 (%)	SG VAPOR PIN ~~Field Observations~~
AA-123 (11:43)	IN UTILITY VAULT HOLE	0						0	SG-110 12.22
AA-124	AROUND MW-9 SEAL	0						500	SG-109 12.25
AA-125	IN STORM CATCH BASIN	0						0	SG-108 12.28
AA-126	AROUND MW-8 SEAL	0						0	SG-104 12.32
AA-127	IN UTILITY VAULT HOLE	0						0	SG-111 12.35
AA-128	IN UTILITY VAULT HOLE	0						0	SG-112 12.37
AA-129 (11:55	CAR EXHAUST OUTSIDE SHOP	2600						100	SG-113 12.39
MAX IA IN DIAMOND SHAPED BLDG @ 1200 CAPTURE SG SAMPLING &	IA @ NEW 1200	300						100	SG-114 12:43
TAKING OUT ~~SOME~~ VAPOR PINS AT BREATHING HEIGHT	~~IA Entry~~							0	SG-115 12:47
IA PRIOR TO REMOVING VAPOR PINS	IA ~ 8:30 until ~ 1100	0						0	SG-124 15:30
DID TRANSECT OF AA GRADE FROM SΔ to EO to NO OVER ~ 15 min period for 12:43 - 1:03		ALL 0, except strick 100 @ AA-106						100	SG-125 15:33
FINAL IA Reading @ breathing height in 3317 Diamond Bldg @ 5:25 →	→	MOSTLY 0, WITH A COUPLE OF 100 for readings							


All locations are approximate
AA-127
MW-6 (AA-126)
AA-128
SG3/IA3
SG1/IA1
MW12
MW9
SG2/IA2
B42
B30
B43
B31
SG4/IA4
B32
Methan
Methan
at repo
AA-114
AA-115
AA-116
AA-113
AA-121
AA-122

EQUIPCO RENTALS

RKI GX-6000
Calibration Certificate

DATE: 9/15/20 CALIBRATED BY: JM

RENTAL I.D.: GX-6000. 04

SERIAL#: S2F0111401-68RN

BATTERY CHARGED X METER ZEROED X

CALIBRATION GAS:

1. Methane 50% LEL LOT#: SX53734
2. Hydrogen Sulfide 25 ppm LOT#: SX53734
3. Carbon Monoxide 50 ppm LOT#: SX53734
4. Isobutylene N/A 100 ppm LOT#: N/A

GAS RESPONSE:

1. 50 LEL +2%
2. 25 H2S +2%
3. 50 CO +2%
4. N/A Isobutylene ±2%

OXYGEN RESPONSE IN FRESH AIR ENVIRONMENT: 20.9% ✓

OXYGEN DOWNSCALE RESPONSE TO 99.9% NITROGEN: 0 %

THIS INSTRUMENT HAS BEEN CALIBRATED BY A FACTORY TRAINED TECHNICIAN

2689 151st PL NE., Redmond WA, 98052 Phone (925) 234 - 5678 Fax (925) 305 - 1303

EQUIPCO

CES LANDTECH MODEL: GEM 2000
CALIBRATION CERTIFICATE

SERVICE TECHNICIAN: CA DATE: 9/15/20

INSTRUMENT INFORMATION

RENTAL ID: GEM2000.11

SERIAL NUMBER: GM07638/04

CALIBRATION INFORMATION

1..CALIBRATION GAS: 35 % CO_2 LOT #: 573162

GAS RESPONSE: 35 % CO_2 ±2%

2. CALIBRATION GAS: 50 % Vol. Methane LOT #: 573162

GAS RESPONSE: 50 % Vol. Methane ±2%

OXYGEN RESPONSE IN FRESH AIR ENVIRONMENT: 20.9% ✓

OXYGEN DOWNSCALE RESPONSE CHECKED: 0% WITH 99.9% Nitrogen ✓

THIS INSTRUMENT HAS BEEN CALIBRATED TO STANDARDS SET FORTH BY THE MANUFACTURER

2689 151st Pl NE, Redmond, WA 98052 Phone (888)234-5678 Fax (925)305-1303

Appendix G

Designation: E2993 – 16

Standard Guide for Evaluating Potential Hazard as a Result of Methane in the Vadose Zone[1]

This standard is issued under the fixed designation E2993; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This guide provides a consistent basis for assessing site methane in the vadose zone, evaluating hazard and risk, determining the appropriate response, and identifying the urgency of the response.

1.2 *Purpose*—This guide covers techniques for evaluating potential hazards associated with methane present in the vadose zone beneath or near existing or proposed buildings or other structures (for example, potential fires or explosions within the buildings or structures), when such hazards are suspected to be present based on due diligence or other site evaluations (see 6.1.1).

1.3 *Objectives*—This guide: *(1)* provides a practical and reasonable industry standard for evaluating, prioritizing, and addressing potential methane hazards and *(2)* raises awareness of the key variables needed to properly evaluate such hazards.

1.4 This guide offers a set of instructions for performing one or more specific operations. This guide cannot replace education or experience and should be used in conjunction with professional judgment. Not all aspects of this guide may be applicable in all circumstances. This guide is not intended to represent or replace the standard of care by which the adequacy of a given professional service should be judged, nor should this guide be applied without consideration of a project's many unique aspects. The word "Standard" in the title means only that the guide has been approved through the ASTM International consensus process.

1.5 Not addressed by this guide are:

1.5.1 Requirements or guidance or both with respect to methane sampling or evaluation in federal, state, or local regulations. Users are cautioned that federal, state, and local guidance may impose specific requirements that differ from those of this guide;

1.5.2 Safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use;

1.5.3 Emergency response situations such as sudden ruptures of gas lines or pipelines;

1.5.4 Methane entry into an enclosure from other than vadose zone soils (for example, methane evolved from well water brought into an enclosure; methane generated directly within the enclosure; methane from leaking natural gas lines or appliances within the enclosure, etc.);

1.5.5 Methane entry into an enclosure situated atop or immediately adjacent to a municipal solid waste (MSW) landfill;

1.5.6 Potential hazards from other gases and vapors that may also be present in the subsurface such as hydrogen sulfide, carbon dioxide, and/or volatile organic compounds (VOCs);

1.5.7 Anoxic conditions in enclosed spaces;

1.5.8 The forensic determination of methane source; or

1.5.9 Potential consequences of fires or explosions in enclosed spaces or other issues related to safety engineering design of structures or systems to address fires or explosions.

1.6 *Units*—The values stated in SI units are to be regarded as the standard.

1.6.1 *Exception*—Values in inch/pound units are provided for reference.

1.7 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D653 Terminology Relating to Soil, Rock, and Contained Fluids

D1356 Terminology Relating to Sampling and Analysis of Atmospheres

D1946 Practice for Analysis of Reformed Gas by Gas Chromatography

[1] This guide is under the jurisdiction of ASTM Committee E50 on Environmental Assessment, Risk Management and Corrective Action and is the direct responsibility of Subcommittee E50.02 on Real Estate Assessment and Management.

Current edition approved March 15, 2016. Published May 2016. DOI: 10.1520/E2993–16

[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

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D2216 Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
D2487 Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
D5088 Practice for Decontamination of Field Equipment Used at Waste Sites
D6725 Practice for Direct Push Installation of Prepacked Screen Monitoring Wells in Unconsolidated Aquifers
D7663 Practice for Active Soil Gas Sampling in the Vadose Zone for Vapor Intrusion Evaluations
E2600 Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions
F1815 Test Methods for Saturated Hydraulic Conductivity, Water Retention, Porosity, and Bulk Density of Athletic Field Rootzones

2.2 *Other Standards:*

California DTSC, Evaluation of Biogenic Methane for Constructed Fills and Dairies Sites, March 28, 2012
County of Los Angeles Building Code, Volume 1, Title 26, Section 110 Methane[3]
ITRC Document VI-1 Vapor Intrusion Pathway: A Practical Guideline[4]
ITRC Document PVI-1 Petroleum Vapor Intrusion: Fundamentals of Screening, Investigation, and Management[5]
EPA 530-R-10-003 Conceptual Model Scenarios for the Vapor Intrusion Pathway
29 CFR 1910.146 Permit-Required Confined Spaces[6]

3. Terminology

3.1 *Definitions:*

3.1.1 This section provides definitions and descriptions of terms used in or related to this guide. An acronym list is also included. The terms are an integral part of this guide and are critical to an understanding of the guide and its use.

3.1.2 *advection, n*—transport of molecules along with the flow of a greater medium as occurs because of differential pressures.

3.1.3 *ambient air, n*—any unconfined portion of the atmosphere; open air.

3.1.4 *barometric lag, n*—time difference between changes in total atmospheric pressure (barometric pressure) and subsequent changes in total gas pressure measured at a specific point in the subsurface.

3.1.4.1 *Discussion*—Atmospheric pressure variations include routine diurnal highs and lows as well as changes associated with exceptional meteorological conditions (weather fronts). The time lag means that differential pressure between the surface and the subsurface point may be out of phase and may reverse (± relative to zero) with resulting reversals in soil gas flow direction over time between the shallow subsurface and the surface.

3.1.5 *barometric pumping, n*—variation in the ambient atmospheric pressure that causes motion of vapors in, or into, porous and fractured earth materials.

3.1.6 *biogas, n*—mixture of methane and carbon dioxide produced by the microbial decomposition of organic wastes, also known as microbial gas.

3.1.7 *biogenic, adv*—resulting from the activity of living organisms.

3.1.8 *contaminant, n*—substance not normally found in an environment at the observed concentration.

3.1.9 *continuous monitoring, n*—measurements of selected parameters performed at a frequency sufficient to define critical trends, identify changes of interest, and allow for relationships with other attributes in a predictive capacity.

3.1.10 *dead volume, n*—total air-filled internal volume of the sampling system.

3.1.11 *differential pressure, n*—relative difference in pressure between two measurement points (ΔP).

3.1.11.1 *Discussion*—ΔP measurements are typically the differences between pressure at some depth in the vadose zone and pressure above ground at the same location (indoors or outdoors), but also could refer to the difference in pressure between two subsurface locations. A ΔP measurement represents a pressure gradient between the two locations.

3.1.12 *diffusion, n*—gas transport mechanism in which molecules move along a concentration gradient from areas of higher concentration toward areas of lower concentration; relatively slow form of gas transport.

3.1.13 *effective porosity, n*—amount of interconnected void space (within intergranular pores, fractures, openings, and the like) available for fluid movement: generally less than total porosity.

3.1.14 *flammable range, n*—concentration range in air in which a flammable substance can produce a fire or explosion when an ignition source is present.

3.1.15 *fracture, n*—break in the mechanical continuity of a body of rock or soil caused by stress exceeding the strength of the rock or soil and includes joints and faults.

3.1.16 *groundwater, n*—part of the subsurface water that is in the saturated zone.

3.1.17 *hazard, n*—source of potential harm from current or future methane exposures.

3.1.18 *microbial, adv*—pertaining to or emanating from a microbe.

3.1.18.1 *Discussion*—The preferred term for nonthermogenic, nonpetrogenic methane such as from anaerobic activity in shallow soils or sanitary landfills is “microbial.”

3.1.19 *moisture content, n*—amount of water lost from a soil upon drying to a constant weight expressed as the weight per unit weight of dry soil or as the volume of water per unit bulk volume of the soil.

3.1.20 *perched aquifer, n*—lens of saturated soil above the main water table that forms on top of an isolated geologic layer of low permeability.

[3] Available from dpw.lacounty.gov.
[4] Available from the Interstate Technology & Regulatory Council, http://www.itrcweb.org/Documents/VI-1.pdf.
[5] Available from the Interstate Technology & Regulatory Council, http://www.itrcweb.org/PetroleumVI-Guidance/
[6] Available from Occupational Safety and Health Administration (OSHA), 200 Constitution Ave., Washington, DC 20210, http://www.osha.gov.

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3.1.21 *permeability, n*—ease with which a porous medium can transmit a fluid under a potential gradient.

3.1.22 *preferential pathway, n*—migration route for chemicals of concern that has less constraint on gas transport than the surrounding soil.

3.1.22.1 *Discussion*—Preferential pathways may be natural (for example, vertically fractured bedrock where the fractures are interconnected) or man-made (for example, utility conduits, sewers, and dry wells).

3.1.23 *pressure-driven flow, n*—gas transport mechanism that occurs along pressure gradients resulting from introduction of gas into the soil matrix.

3.1.23.1 *Discussion*—The flow of gas is from the region of high pressure to regions of lower pressure and continues until the gas pressure is equal or the flowpath is blocked. With advection, molecules are transported along with the flow of a greater medium. With pressure-driven flow, the introduced gas is the medium.

3.1.23.2 *Discussion*—In the vadose zone, elevated pressures in a given volume of soil can occur as a result of biogas generation at that location. Therefore, whether or not a given site has active biogas generation is an important consideration in evaluating methane hazard.

3.1.24 *porosity, n*—volume fraction of a rock or unconsolidated sediment not occupied by solid material but usually occupied by liquids, vapor, and/or air.

3.1.24.1 *Discussion*—Porosity is the void volume of soil divided by the total volume of soil.

3.1.25 *probe, n*—device designed to investigate and collect information from a remote location.

3.1.25.1 *Discussion*—As used in this guide, a point or methane test well used to collect information from within the vadose zone or subslab space of a building.

3.1.26 *purge volume, n*—amount of air removed from the sampling system before the start of sample collection.

3.1.26.1 *Discussion*—This is usually referred to in terms of number of dead volumes of probe (test well) casing or test well plus granular backfill total volume.

3.1.27 *repressurization, n*—unpressurized soil vapors can be pressurized by phenomena such as rapidly rising groundwater.

3.1.28 *risk, n*—probability that something will cause injury or harm.

3.1.29 *saturated zone, n*—zone in which all of the voids in the rock or soil are filled with water at a pressure that is greater than atmospheric.

3.1.29.1 *Discussion*—The water table is the top of the saturated zone in an unconfined aquifer.

3.1.30 *soil gas, n*—vadose zone atmosphere; soil gas is the air existing in void spaces in the soil between the groundwater table and the ground surface.

3.1.31 *soil moisture, n*—water contained in the pore spaces in the vadose zone.

3.1.32 *subslab vapor sampling, v*—collection of vapor from the zone just beneath the lowest floor slab of a building or below paving or soil cap.

3.1.33 *thermogenic, adj*—methane that is generated at depth under elevated pressure and temperatures during and following the formation of petroleum (for example, in oil fields).

3.1.34 *tracer, n*—material that can be easily identified and determined even at very low concentrations and may be added to other substances to enable their movements to be followed or their presence to be detected.

3.1.35 *tracer gas, n*—gas used with a detection device to determine the rate of air interchange within a space or zone or between spaces or zones.

3.1.36 *vadose zone, n*—hydrogeological region extending from the soil surface to the top of the principal water table.

3.1.36.1 *Discussion*—Perched groundwater may exist within this zone.

3.1.37 *vapor intrusion, n*—migration of a volatile chemical(s) from subsurface soil or water into an overlying or nearby building or other enclosed space.

3.1.38 *volatile organic compound, VOC, n*—an organic compound with a saturation vapor pressure greater than 10^{-2} kPa at 25°C (Terminology D1356-14).

3.1.39 *water table, n*—top of the saturated zone in an unconfined aquifer.

3.2 *Acronyms and Abbreviations:*

3.2.1 *ACH*—air changes per hour

3.2.2 *CSM*—conceptual site model

3.2.3 *FID*—flame ionization detector

3.2.4 *HVAC*—heating, ventilation, and air conditioning

3.2.5 *In. H_2O*—inches of water, a measure of pressure exerted by a column of water 1 in. (2.54 cm) in height; 1 in. H_2O equals approximately 250 Pa

3.2.6 *LEL*—lower explosive limit (same as lower flammable limit)

3.2.7 *Pa*—Pascal, a measure of pressure

3.2.8 *ppmv*—part per million on a volume basis

3.2.9 *psi*—pounds per square inch

3.2.10 *QA/QC*—quality assurance/quality control

3.2.11 *UEL*—upper explosive limit (same as upper flammable limit)

3.2.12 *USEPA*—U.S. Environmental Protection Agency

3.2.13 *VOC*—volatile organic compound

3.2.14 *v/v*—by volume, as in percent by volume (% v/v)

4. Summary of Guide

4.1 This guide describes site screening, testing, data analysis, evaluation, and selection of mitigation alternatives.

4.2 *Three-Tiered Approach*—This guide provides an approach for assessing and interpreting site methane, evaluating hazard and risk, determining the appropriate response, and identifying the urgency of the response. A three-tiered approach is given that uses a decision matrix based on methane concentrations in the vadose zone and other factors such as indoor air concentrations, differential pressure measurements, and estimates of the volume of methane within soil gas near a

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building to determine the potential hazard. The *first tier* consists of a site evaluation that can typically be done using existing, available information. This information is compiled, reviewed, and used to develop a conceptual site model (CSM). The CSM should describe and summarize the source of any methane that is present, vadose zone conditions (for example, depth to groundwater and soil type), size of impacted area, design and use of any existing buildings, exposure scenario, and other relevant lines of evidence for a given site. A decision matrix is applied to get an initial prediction of hazard. For sites in which potentially significant data gaps are identified during the Tier 1 review, the *second tier* consists of a refined site evaluation. Additional field work is performed to address the data gaps. The results are compared with the CSM and the CSM revised, as necessary. The decision matrix is again applied to the new, expanded data set to get an updated prediction of hazard. If it is determined that more data are needed, the *third tier* consists of a special case evaluation. For all three tiers, the path forward at any point should respect applicable regulatory guidance and consider risk management principles, technical feasibility, and community concerns.

4.2.1 The evaluation process is typically implemented in a tiered approach involving increasingly sophisticated levels of data collection, analysis, and evaluation. Users may choose to proceed directly to the most sophisticated tier, to pre-emptive mitigation, or to routine monitoring based on site-specific circumstances.

4.2.2 For some sites, a limited number of samples may not be sufficient to address potential hazard because there are *(1)* significant potential methane source(s) in the vicinity of the site (for example, a large mass of buried organic matter such as plants, wood, etc.) *(2)* high-permeability preferential pathways present that may result in higher than typical rates of vapor transport (for example, gravel trench for utility lines), *(3)* relatively high permeability soils (for example, sand or gravel) with insufficient moisture to support methanotrophic bacteria, or *(4)* changes in groundwater elevation over short time periods, which can create pressure gradients in the vadose zone. For such sites, presumptive mitigation or Tier 3 evaluation (for example, continuous or regular monitoring) should be considered.

4.3 *Site Categorization*—This guide is designed to promote rapid site characterization so that low-risk sites can be identified and efficiently removed from further evaluation. Conversely, high-risk sites can be identified and appropriate follow-up actions taken promptly. This guide focuses on Tier 1 and 2 evaluations. Special case evaluations (Tier 3) are generally outside the scope of this guide, but applicable tools and considerations are described for information purposes.

5. Significance and Use

5.1 Several different factors should be taken into consideration when evaluating methane hazard, rather than, for example, use of a single concentration-based screening level as a de-facto hazard assessment level. Key variables are identified and briefly discussed in this section. Legal background information is provided in Appendix X3. The Bibliography includes references where more detailed information can be found on the effect of various parameters on gas concentrations.

5.2 *Application*—This guide is intended for use by those undertaking an assessment of hazards to people and property as a result of subsurface methane suspected to be present based on due diligence or other site evaluations (see 6.1.1).

5.2.1 This guide addresses shallow methane, including its presence in the vadose zone; at residential, commercial, and industrial sites with existing construction; or where development is proposed.

5.3 This guide provides a consistent, streamlined process for deciding on action and the urgency of action for the identified hazard. Advantages include:

5.3.1 Decisions are based on reducing the actual risk of adverse impacts to people and property.

5.3.2 Assessment is based on collecting only the information that is necessary to evaluate hazard.

5.3.3 Available resources are focused on those sites and conditions that pose the greatest risk to people and property at any time.

5.3.4 Response actions are chosen based on the existence of a hazard and are designed to mitigate the hazard and reduce risk to an acceptable level.

5.3.5 The urgency of initial response to an identified hazard is commensurate with its potential adverse impact to people and property.

5.4 *Limitations*—This guide does not address potential hazards from other gases and vapors that may also be present in the subsurface such as hydrogen sulfide, carbon dioxide, and/or volatile organic compounds (VOCs) that may co-occur with methane. If the presence of hydrogen sulfide or other potentially toxic gases is suspected, the analytical plan should be modified accordingly.

5.4.1 The data produced using this guide should be representative of the soil gas concentrations in the geological materials in the immediate vicinity of the sample probe or well at the time of sample collection (that is, they represent point-in-time and point-in-space measurements). The degree to which these data are representative of any larger areas or different times depends on numerous site-specific factors. The smaller the data set being used for hazard evaluation, the more important it is to bias measurements towards worst-case conditions.

5.5 *Variables and Site-Specific Factors that May Influence Data Evaluation:*

5.5.1 *Gas Transport Mechanisms*—Methane migration in soil gas results from pressure-driven flow, advection and diffusion. Advective transport and pressure-driven flow has been associated with methane incidents (for example, fires or explosions), whereas no examples are known of methane incidents resulting from diffusive transport alone. Therefore, diffusion is not considered a key transport mechanism when evaluating methane hazard.

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5.5.1.1 The potential for significant rates of soil gas transport can often be recognized by relatively high differential pressures (for example, >500 Pa [2 in. H_2O]), high concentrations of leaked or generated gas, and concurrent displacement of atmospheric gases (nitrogen, argon) from the porous soil matrix.

5.5.2 *Effect of Gas Transport Mechanisms:*

5.5.2.1 *Near-Surface Advection Effects*—Within buildings, across building foundations, and in the immediate subsurface vicinity of building foundations, advective flow may be driven by temperature differences, the on-off cycling of building ventilation systems, the interaction of wind and buildings, and/or changes in barometric pressure. These mechanisms can pump air back and forth between the soil and the interior of structures. The effects may be significant in evaluation of VOC or radon migration between buildings and the subsurface, but are relatively minor factors in evaluation of methane migration and hazard.

5.5.2.2 *Source Zone Flow Effects*—Biogenic (microbial) gas generation (methanogenesis) results in a net increase in molar gas volume near the generation source. The resulting increased gas pressure causes gas flow away from the source zone. This gas flow typically originates near sources of buried organic matter. Pressure-driven flow can also result from pressurized subsurface gas sources including leaks from natural gas distribution systems, subsurface gas storage, or seeps from natural gas reservoirs. The evaluation of pressurized sources of gas themselves (for example, pipelines, reservoirs, or subsurface storage) is outside the scope of this guide (see 1.5.3 – 1.5.5).

5.5.2.3 Subsurface soil gas pressure change can also occur in other instances, such as with a rapidly rising or falling water table in a partially confined aquifer or barometric pumping of fractured bedrock or very coarse gravel. This effect may occur in conjunction with advection of either dilute or high-concentration soil gases and may be irregular or intermittent. The CSM should consider the potential for induced pressure-driven flow (which is sometimes referred to as repressurization).

5.5.3 *Effect of Land Use*—Combustible soil gas is a concern mostly for sites with confined habitable space because of the safety risk. Combustible soil gas can also be a concern at sites with other types of confined spaces, such as buried vaults where a source of ignition may be present.

5.5.4 *Pathways*—Pathways into buildings from the soil can include cracks in slabs, unsealed space around utility conduit penetrations, the annular space inside of dry utilities (electrical, communications), elevator pits (particularly those with piston wells), basement sumps, and other avenues.

5.5.5 *Effect of Hardscape and Softscape*—Any capping of the ground surface can impede the natural venting of soil gas. Hardscape and well irrigated softscape both present barrier conditions. Existing hardscape/softscape conditions should be noted during soil gas investigations. Proposed hardscape/softscape conditions should be considered when formulating alternatives for action at sites where methane hazard is to be mitigated.

5.5.6 *Effect of Soil Physical Properties*—The diffusion of gas through soil is controlled by the air-filled porosity of the soil, whereas the advection and pressure-driven flow of gas through soil is controlled by the permeability of the soil. Two soils can have similar porosities but different permeabilities and vice-versa. The effective porosity of a soil may be different than the total porosity depending on whether the soil pores are connected or not. For methane transport, advective and pressure-driven flow is of much more concern than diffusive flow, so permeability is a more important variable than porosity. Large spaces such as fractures in fine-grained soils can impart a high permeability to materials that would otherwise have a low permeability. Soil moisture can reduce the air-filled porosity of soil and the gas permeability thereby reducing both diffusive and advective flow of soil gas.

5.5.7 *Effect of Environmental Variables*—A number of environmental variables can affect the readings taken in the field and can be important in interpreting the readings once taken. The effect of environmental variables tends to be greatest for very shallow measurements in the vadose zone and typically is of limited importance at depths of 1.5 m and greater.

5.5.8 *Atmospheric Pressures and Barometric Lag*—A falling barometer may leave soil gas under pressure as compared with building interiors enabling increased soil gas flux out of the soil and into structures. The interpretation of barometric lag data should take into account the type of soil. Barometric lag is most pronounced in tight (clayey) soils in which the flow of gases is retarded; barometric lag is least pronounced in granular (sandy) soils that provide the greatest permeability for the flow of gas. The potential for pressure-driven gas transport through soil is significant only for permeable soil pathways.

5.5.9 *Precipitation*—Normal outdoor soil gas venting (that is, emissions at soil surface) is impeded when moisture fills the surface soil pore space. Infiltrating rainwater may displace soil gas and cause it to vent into structures. Increases in soil moisture following rain or other precipitation events can lead to enhanced rates of biogas generation, which may be evaluated through repeated measurements.

5.5.10 *Effect of Sampling Procedures*—Sampling probes (test wells) typically are designed to identify soil gas pressures and maximum soil gas concentrations at the point of monitoring. The sequence of steps (for example, purging, pressure and concentration readings, and so forth) can affect the results. For differential pressure measurements, gages capable of measuring 500 Pa (2 in. H_2O) may be used. Ideally, the gage or gages should be capable of measurements over a range of pressures (for example, 0 to 1,250 Pa (0 to 5 in. H_2O)) and have a resolution of at least 25 Pa (0.1 in. H_2O). See the Bibliography for references on equipment for concentration and differential pressure measurements. Initial readings of pressure should be taken before any gas readings, as purging can reduce any existing pressure differential and steady-state conditions may not be reestablished for some time afterwards. Soil gas pressures and soil gas concentrations should also be measured after purging. The recovery, or change of pressure with time, may also be of interest. Gas pressure readings taken in groundwater monitoring wells may not be representative of vadose zone pressures.

5.6 *Applicability of Results*—Instantaneous data from monitoring probes represent conditions at a point in space and time.

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Worst-case, short-term impacts are of interest in a methane evaluation because of the acute risk posed by methane. Single-sampling events in which data are collected from a number of points at different locations may be sufficient if there is a robust CSM (that is, accounting for worst-case conditions) and the site is well understood. If site results are inconsistent with the CSM, additional data may be needed to address uncertainties and increase the statistical reliability and confidence in the results.

6. Approach to Methane Hazard Evaluation

6.1 *Decision Framework:*

6.1.1 Investigations may be triggered by site-specific findings (for example, observations of bubbling at ground surface or in water wells; measurement of methane in soil gas; odors; or, in extreme cases, fire or explosion or both) or may result from planned studies (for example, methane evaluations pursuant to property transfer, property refinance, or during the application process for a building permit). Investigation of methane in soil may also follow detection during other investigations, such as in confined space screening (29 CFR 1910.146) or environmental investigation of chemical-impacted soils and groundwater. The general process is shown in Fig. 1. The volume of gas that is important will depend on the size of the building footprint. In general, the greater the spatial extent of soil gas with elevated methane, the greater the potential for vapor intrusion of methane to be an issue. A single, isolated hot spot of 5 to 30 % methane is unlikely to result in an indoor air issue.

6.1.2 Decision making uses a matrix of soil gas and indoor air values to address both current risk and potential future risk (see Table 1). The matrix is a risk management approach that uses conservative screening values for methane concentration and differential pressure to rank site hazard. The available volume of soil gas containing elevated levels of methane also is a consideration. It is important to recognize that the values are guidelines and not absolute thresholds. Concentrations and pressure need to be considered in terms of the CSM. The decision matrix shown in Table 1 is a suggested starting point and should be adjusted as appropriate for site-specific conditions. The 500 Pa (2 in. H_2O) criterion for ΔP is based on measurements in the vadose zone at a depth or interval of 1.5 m (for example, difference between pressure measurements 1.5 m below ground surface and ambient air). For measurements at 1.5 m or greater, temporal variability is typically not significant. However, for shallower measurements or measurements at sites with highly permeable matrices, the potential for temporal variability warrants further consideration.

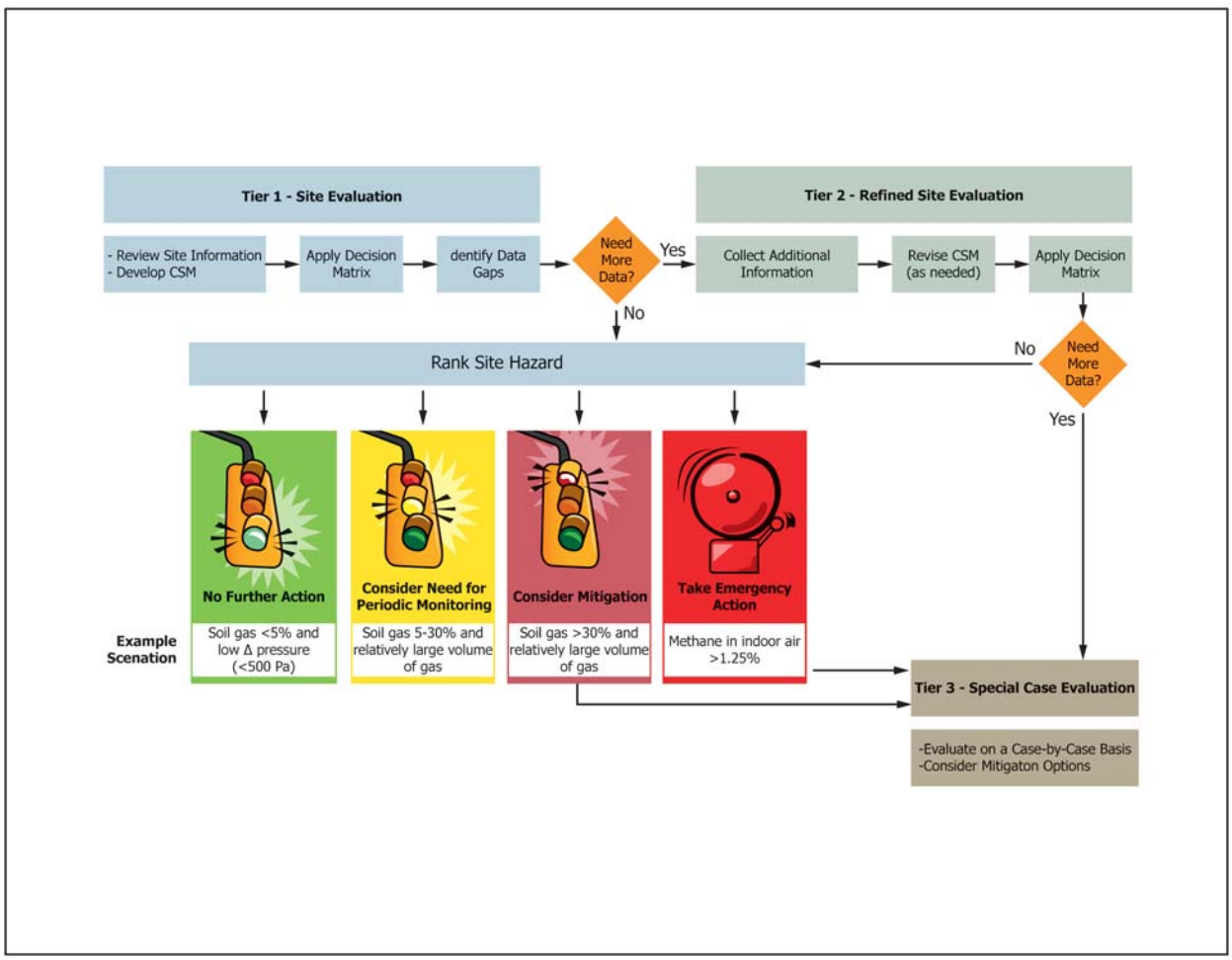


FIG. 1 Tiered Evaluation Process

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TABLE 1 Suggested Default Decision Matrix for Methane in Soil Gas and Indoor Air

NOTE 1—Table based on Eklund, 2011 (**1**) and Sepich, 2008 (**2**)[D] . See also Appendix X2. Table is intended for sites with existing buildings. To address future development, no further action is recommended if the shallow soil gas concentration is <30% and ΔP <500 Pa.

NOTE 2—If the combined soil gas concentrations of methane and carbon dioxide are ≥90%, mitigation should be considered.

NOTE 3—Soil gas outside the building footprint but within a radius of 60 m (200 ft) of the building may be of interest. The total mass of methane present should be considered (that is, concentration × volume).

Shallow Soil Gas Conc.[A]	Indoor Air Concentration			
	No Measurements Available	<0.01% (that is <100 ppm)	0.01 to <1.25%	>1.25%
<1.25% to 5%	No further action	No further action	No further action[B]	Immediately notify authorities, recommend owner/operator evacuate building
>5% to 30%[C]	No further action unless ΔP >500 Pa[B]	No further action unless ΔP >500 Pa[B]	No further action unless ΔP >500 Pa[B]	Immediately notify authorities, recommend owner/operator evacuate building
>30%[C]	Collect indoor air data	Evaluate on case-by-case basis	Evaluate on case-by-case basis	Immediately notify authorities, recommend owner/operator evacuate building

[A] Maximum methane soil gas value for area of building footprint. Shallow soil gas refers to soil gas in the vadose zone within the top 10 m (33 ft) of soil below ground surface.
[B] Landowner or building owner/manager should identify indoor sources and reduce/control emissions. If no sources are found, additional subsurface characterization and continued indoor air monitoring should be considered. ΔP refers to pressure gradients in the subsurface at a depth or interval of 1.5m. For gravel or other highly permeable matrices, use of a more conservative criterion less than 500 Pa (2 in. H_2O) may be appropriate.
[C] The potential for pressure gradients to occur in the future at a given site should be considered.
[D] The boldface numbers in parentheses refer to a list of references at the end of this standard.

6.1.3 The screening values for methane concentration are, in most cases, derived from the lower flammable limit for methane in air, that is, 5 %, since methane hazard is related to flammability rather than toxicity. Concentration, pressure, and volume should be taken into account. Physical and toxicological characteristics of methane are summarized in Appendix X1. Additional discussion of the screening values is provided in Appendix X2. Note that for soil gas, methane concentration alone is insufficient to evaluate potential hazard. Information on pressures and volumes is also essential.

6.1.4 Screening values are location specific. That is, soil gas screening values should be used for comparison with site soil gas results and indoor air/confined space screening values should be compared only with indoor air/confined space results (for example, Table 1).

6.2 *Develop Conceptual Site Model (CSM)*—The user is required to identify the potential primary sources of methane in the subsurface, potential receptor points, and significant likely transport pathways from the primary sources to the receptors. Various vapor intrusion guidance documents describe the development of CSMs (ITRC Document VI-1 and PVI-1 and EPA/OSWER), though not for methane sites. The CSM provides a framework for the process of evaluating methane hazard. The CSM summarizes what is known about the site in terms of source, depth to groundwater, geology, data trends, receptors, building design and operation, and so forth. The CSM should consider reasonable worst-case conditions such as falling and low relative barometric pressure conditions or potential soil gas repressurization. The results of any further investigations are compared with the CSM to see whether or not the results are consistent with the expectations derived from the CSM. If the results are found to differ in material ways from these expectations, the CSM will require modification.

6.2.1 *Source*—Methane is produced by two primary mechanisms: thermogenic and microbial (see Appendix X1). Thermogenic or "fossil" methane typically originates from petroleum deposits at depths generally far below the vadose zone. Natural gas is largely thermogenic methane and may occur in coal mines, oil and gas fields, and other geological formations. Thermogenic methane, once produced, is carried in natural gas transmission and distribution lines. Microbial or "biogenic" methane typically is generated at relatively shallow depths by the recent microbial decomposition of organic matter in soil. The "biogas" produced is essentially all methane and carbon dioxide. If $CH_4 + CO_2$ approach 100 %, the gas is said to be "whole" or "undiluted." Microbial methane is a product of decomposition of organic matter in both natural (for example, wetlands and river and lake sediments) and man-made settings (for example, sewer lines, septic systems, and manure piles).

6.2.2 *Transport*—Methane will migrate along pressure gradients from areas where it is present at higher pressures to areas where it is present at lower pressures, or along concentration gradients, also from high to low. The primary mechanism for significant methane migration in subsurface unsaturated soils is pressure-driven flow. Diffusion also occurs but at rates too low to result in unacceptable indoor air concentrations under reasonably likely scenarios. Soils can be a significant sink for methane, with aerobic biodegradation also an important fate and transport consideration.

6.2.3 *Receptors*—Residential, commercial, and industrial buildings, and the individuals therein, are the primary receptors of interest. Buildings typically have roughly 0.5 to 1 air changes per hour (ACH) and a relatively high rate of vapor intrusion is necessary for the indoor atmosphere to approach the lower flammability limit for methane of 5 %. Therefore, portions of the buildings with lower rates of air exchange are of most interest, such as closed cabinets beneath sinks, closets,

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and stagnant areas of basements. Utility vaults and other small, poorly ventilated subsurface structures may be viewed as receptors or as worst-case indicators of potential conditions in nearby buildings.

6.3 *Use a Tiered Approach*—The evaluation process is typically implemented in a tiered approach involving increasingly sophisticated levels of data collection, analysis, and evaluation. Upon evaluation of each tier, the user reviews the results and recommendations and decides whether more detailed and site-specific analysis is necessary to refine the hazard analysis (see Fig. 1). Fires or explosions caused by intrusion of methane gas from the soil are relatively rare events, so it is assumed that most sites will be "screened out" by this process and result in no further action. (Such events, when they do occur, may be due to large leaks from natural gas transmission or distribution lines, which are outside the scope of this guide. This guide could be used, however, to evaluate residual hazard after the lines have been repaired.)

6.3.1 *Site Evaluation (Tier 1)*—Site information is assembled and evaluated.

6.3.1.1 At a minimum, this should include a desktop review of source (7.1.1 – 7.1.3), pathway (7.1.6 and 7.1.7) and receptor (7.1.8) characteristics, and collection and review of site soil gas measurements.

6.3.1.2 A conceptual site model is developed specific to methane (see 6.2).

6.3.1.3 An initial evaluation of hazard is made using Table 1.

6.3.1.4 The user should select a response action option that best addresses the short-term concerns for the site, if any. Note that the initial response actions listed in Table 1 are not necessarily comprehensive or applicable for all sites.

6.3.1.5 If the initial data evaluation indicates data gaps, collect additional soil gas or other data, as needed, and reevaluate based upon the Fig. 1 and Table 1. For example, in many cases, methane concentration data are available at this stage, but information about carbon dioxide and oxygen concentrations, and differential pressures, may not exist. The amount of organic material in the subsurface that is potentially still subject to microbial degradation also may not be well characterized unless adequate soil-boring logs are available.

6.3.2 *Refined Site Evaluation (Tier 2)*—In many cases, additional site-specific data will be needed to support an evaluation of methane hazard. These additional data needs may include any or all of the following: *(1)* speciating the soil gas including measuring methane, carbon dioxide, higher order hydrocarbons, hydrogen sulfide, oxygen, nitrogen and argon in the soil gas to determine if the biogas is diluted or undiluted; *(2)* measuring differential pressures; *(3)* measuring methane at additional locations to determine the spatial distribution of methane in the subsurface and characterize better the potential volume/mass of methane present; *(4)* repeat measurements to help identify and quantify temporal variability of methane concentrations and pressures; and/or *(5)* collecting data to estimate methane emissions and flux (CA DTSC, 2012).

6.3.2.1 The amount of additional measurement data needed will depend on the initial evaluation of hazard and consistency of site measurements with the CSM. In general, the greater the uncertainty and potential risk, the more likely additional data will be needed.

6.3.2.2 If the data evaluation indicates data gaps, collect additional soil gas or other data and reevaluate based upon Fig. 1 and Table 1. Considerations for sampling and analysis are provided in Section 7 and the Bibliography.

6.3.3 *Special Case Evaluation (Tier 3)*—Some sites will require further investigation beyond the refined site evaluation because of remaining data gaps, certain atypical features of the CSM (for example, ongoing biogas generation, preferential pathways), or other risk management considerations. These sites should be evaluated on a case-by-case basis by an experienced professional. Such evaluations are outside the scope of this guide.

6.3.4 If there is still uncertainty, more advanced methods of site analysis may be used, such as *(1)* mathematical modeling, *(2)* continuous monitoring techniques, or *(3)* other acceptable methods. See the Bibliography.

6.4 *Exiting the Investigative Phase*—Exit points are summarized in Fig. 1 and Table 1. At any time, if there is still uncertainty in whether hazard exists, or if it is simply not desired to do further site evaluation, then mitigation or continued monitoring can be considered.

6.5 *Hazard*—Methane is not flammable directly within a typical soil matrix; the primary hazard is the flammability of methane in air (that is, in buildings). Methane in the soil gas is of concern if it migrates into enclosed spaces and mixes with air (including oxygen) to form a mixture within or above the flammable range: 5 to 15 %.

6.6 *Classify Sites and Situations*—A classification, or ranking, system is applied based on the potential hazard and the urgency of need for response action (see Fig. 1). The classification is based on information collected and reviewed during the site evaluation or refined site evaluation. Response actions are associated with classification and are to be implemented concurrently with an iterative process of continued assessment and evaluation. The classification system is applied at the initial stage of the process and also at any stage of the process in which site conditions change or new information is added. As the user gathers data, site conditions are evaluated and an initial response action implemented consistent with site conditions. The process is repeated when new data indicates a significant change in site conditions. Site urgency classifications are indicated in Table 1 along with example initial response actions. The user should select a response action option that best addresses the short-term concerns for the site. Note that the initial response actions listed in Table 1 are not necessarily comprehensive or applicable for all sites. Actual emergency response to an ongoing incident involves measurement of ambient gas levels at structures, points of emission from ground surface, etc. Normally, fire department and/or emergency response professionals will be involved in this effort and decision making. Emergency response monitoring is beyond the scope of this guide.

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6.7 *Implement Response Action, if Applicable*—Response actions are selected to mitigate the identified hazard at the identified receptor. Consult Guide E2600 regarding mitigation of soil vapor hazard.

6.7.1 If the methane evaluation parameters are above levels of concern at the receptor points, along the transport pathway, or in primary source zones, the user develops measures designed to mitigate the hazard at the exposure point.

6.7.2 Hazard may also be mitigated by eliminating or controlling conditions at the exposure point, along the transport pathway, or in the primary source zone.

6.7.3 The mitigation measures may be a combination of engineering controls or institutional controls.

6.7.4 Remediation, or source removal, is seldom done for methane in soil gas. Sources may be too large or too deep or remote (off-site), making source removal impossible or at least economically unfeasible.

6.7.5 Institutional controls include covenants, restrictions, prohibitions, and advisories, and may include requirements for mitigation at some point.

6.7.6 *Engineering Controls*—Mitigation is the normal method of dealing with methane soil gas (see Fig. 2). At new buildings, mitigation techniques include: *(1)* subslab membrane and vent piping and *(2)* intrinsically safe design features. Intrinsically safe design allows no vapor pathway from the soil to confined space. Methods may include crawl spaces, first-floor "open-air" garages, or well-ventilated podium structures including basements. At existing buildings, mitigation techniques include: *(1)* barriers, passive crack repair, or other pathway plugging; *(2)* passive venting; *(3)* active venting; *(4)* positive pressure HVAC systems; *(5)* gas extraction systems; and *(6)* louvers in non-conditioned space that may also be used to increase air exchange rates inside structures. If pathways are blocked or plugged, an alternate route for venting of blocked gases is needed. Existing buildings may have VOC or radon mitigation systems already installed. If vent piping is part of the design, then mitigation systems for VOCs or radon should also serve to control methane as well. The potential for vented vapors to exceed an LEL should be evaluated to determine if an upgrade to an explosion-proof fan is warranted.

6.7.7 *Performance Monitoring*—Monitoring of soil gas, membrane performance, and/or interior air gas may be done.

6.7.7.1 Interior air monitoring such as with electronic gas detectors can be useful but is not itself a mitigation of gas intrusions since the detectors do not serve to prevent gas from entering a structure. Gas detection coupled with alarms may mitigate hazard by warning occupants to evacuate a structure when hazardous conditions ensue.

6.7.7.2 Monitoring of gas concentrations or pressures or both below the slab of a structure may be useful in determining changing soil gas conditions and risk.

6.7.8 *No Further Action*—This decision may be reached at various points, including before or after mitigation or control measures have been implemented, or after some period of monitoring. This step may be determined at any stage, including without mitigation or control, after mitigation or control, or after some period of monitoring.

7. Procedures for Information Collection and Evaluation

7.1 *Information Needs for Site Assessment*—Gather and collect information necessary for site classification, initial

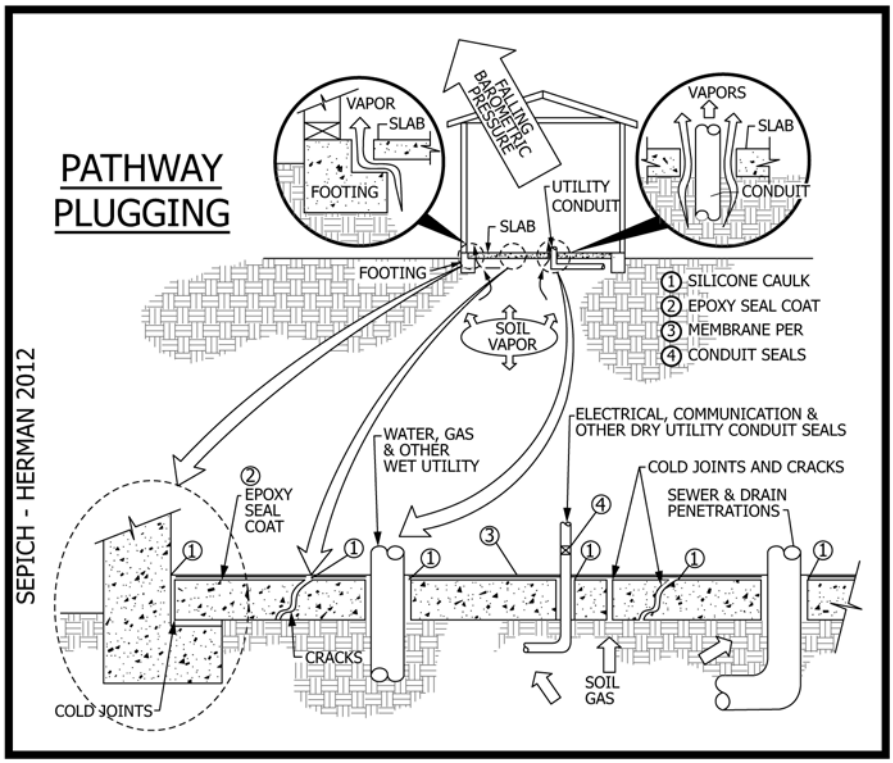


FIG. 2 Mitigation Method for Methane Soil Gas

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response action, and comparison of data with screening criteria. Specific considerations follow.

7.1.1 *General Gas Data*—Review historical records, conduct site visits, conduct interviews, and consolidate a summary of any prior adverse events in the vicinity that might include: *(1)* complaints; *(2)* gas bubbles at ground surface after rainfall or irrigation; *(3)* odors as a result of trace non-methane vapors; *(4)* seeping gas, seeping tar, and oily groundwater; *(5)* ignition at cracks in slab; *(6)* explosions; and *(7)* eruption of gas from geotechnical or other soil borings upon encountering free gas or supersaturated groundwater during drilling.

7.1.2 *Potential Gas Sources*—Identify major potential sources and contributing sources to methane in the subsurface. Sources of methane in the subsurface can include: municipal solid waste landfills, volcanoes, petroleum gas reservoirs, very large subsurface releases of petroleum fluids, organic fill areas, bogs, swamps, wetlands, rice paddies, petroleum and gas seeps, natural gas pipeline and distribution systems, sewers, septic leachate fields, municipal sewers that include a high organic loading and leakage directly into the shallow subsurface, buried organic matter including vegetation, and other sources.

7.1.3 *Soils and Groundwater Data*—Identify relevant site and regional hydrogeological and geological characteristics, for example: *(1)* depth to groundwater, *(2)* soil type(s), *(3)* aquifer type and thickness, and *(4)* description of stratigraphy and confining units.

7.1.4 *Groundwater Gas Data*—Dissolved gas in groundwater has a bearing upon vadose zone gas concentrations. Ebullition (bubbling) from groundwater may occur if the dissolved gas is at a saturation limit. Quantifying the methane requires additional information on the occurrence of methane ebullition and, if so, the rate of methane gas flow, and is outside the scope of this guide. Groundwater methane concentration data alone cannot be directly correlated to unsaturated zone soil concentrations or the potential hazard from methane in buildings situated above the impacted groundwater. Saturated groundwater may pose a hazard if the groundwater is withdrawn for use. When the groundwater is no longer confined, the methane may volatilize and unacceptable indoor air concentrations may result in pump houses and other indoor spaces.

7.1.5 *Vadose Zone Gas Data*—Determine the methane evaluation parameters present in the subsurface and compare to levels of potential concern using the decision matrix (Table 1). Methane in the subsurface may be ubiquitous in soils under anoxic conditions. Methane concentration data alone is not sufficient to evaluate hazard from vadose zone gas. Soil gas pressures, soil types, pathways, receptors and other information are also necessary (see 6.1).

7.1.6 *Soil Gas Pathways*—Identify: *(1)* where methane gas may move directly into buildings, confined spaces, or tunnels or into subsurface structures (vaults, valve and meter boxes, ducts, conduits, vent pipes, sumps, sewers, and so forth); *(2)* situations in which a receptor (confined space) is exposed to a source of methane soil gas directly through air-connected soil porosity; and *(3)* preferential pathways such as coarse gravel backfill around utility lines leading to structures or large cracks or fractures in soil. Pathways may sometimes be discerned or assumed when elevated gas concentrations are found in vaults. Pathways may also be determined through evaluation of existing soils and geological reports for a site, the study of underground utility as-builts, or new investigations involving borings or trenching for observation of subsurface conditions.

7.1.7 *Gas Receptors and Points of Exposure*—Identify locations where hazard is of direct concern such as vaults, building interiors, tunnels, and any other confined spaces that are buried/below or above grade.

7.1.8 *Interior Gas Data*—Measure methane concentration at receptors and points of exposure (that is, in building or other enclosed spaces and structures) and compare to levels of concern, such as fraction of LEL. Other considerations apply. See Table 1. Measurements outside a building or structure (for example, soil gas measurements) may be used to extrapolate or predict conditions inside the building or structure. Conservative factors can be used for the extrapolation or may be modified based on site-specific conditions.

7.2 *Guidelines for Test Probe Installation, Monitoring, Sampling, and Analysis:*

7.2.1 *Why to Sample Methane Soil Gas*—Combustible soil gas sampling can be triggered by changes in ownership or refinancing, change in land use, simultaneous with other site investigations, or by some field event or observation.

7.2.2 *Where to Sample Soil Gas*—Considerations include:

7.2.2.1 *Radius-Based Sampling*—In some jurisdictions, sampling for methane gas is typically done within prescribed distances from a methane source [for example, 305 m (1000 feet) of a sanitary landfill (County of Los Angeles Building Code Section 110); over or within 457 m (1,500 feet) of the administrative boundaries of an oilfield (City of Los Angeles methane buffer zone); or within some radius of an oil well, such as 8 to 61 m (25 to 200 feet; City of Los Angeles) or 107 m (350 feet; Orange County California)].

7.2.2.2 *Source Recognition Gas Sampling*—Often, there is no governance and the consultant should be aware of unregulated but known potential methane areas such as organic soils, swamps, marshes, and glacial till and any site where incidents or previous investigations and reports suggest the potential for combustible soil gas.

7.2.2.3 *Site Surface Features*—Consideration should be given to site specifics such as drainage patterns, location of hardscape and softscape, distance from structures, and any other site culture or conditions that may affect methane readings.

7.2.2.4 *Site Subsurface Features*—Consideration should be given to site specifics such as soils and geologic strata, groundwater and perched water depths, soil type, soil moisture, location of nearby underground utilities, and any other subsurface conditions that may affect methane readings.

7.2.2.5 *Vadose Zone Gas Sampling*—Methane samples are collected from various sources, including vadose zone push probes, vadose zone monitoring well head space and casing gas, landfill gas wells and pipelines, and oilfield hydrocarbon wells.

7.2.2.6 *Surface Sweeps*—Surface sweeps or screening may identify points of direct leakage and flow of soil gas from below grade to atmosphere or structure interiors. The finding of

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methane in surface sweeps may provide direct evidence of methane flow. Such findings should normally be followed up by evaluation of soil gas concentrations and pressures, which are normally elevated at locations where surface seepage of methane is occurring.

7.2.3 *When to Sample Soil Gas*—Consideration should be given to diurnal variations, seasonal variations, recent rainfall, time since grading operations were conducted on a site, and other factors that could affect methane readings. Periods of falling barometric pressure may represent worst-case conditions. Other factors to consider would include soil moisture (and time since most recent precipitation, infiltration wetting front, hysteresis, soil type, and so forth), temperature and tidal fluctuations (for example, when near shorelines). For sites at which risk level is not obvious based upon the normal monitoring, it may be desired to perform more detailed analyses or continuous monitoring (see Bibliography).

7.2.4 *Other Samples and Measurements:*

7.2.4.1 *Indoor Air*—Air may be tested and samples may be collected from inside structures. Unlike the process for evaluating hazard from gas in the soil, it is not necessary to understand or measure pressures and volumes (flows) for direct evaluation of interior gas hazard. Gross interior air combustible gas concentrations alone (for example, greater than 1.25 % v/v, or 25 % of the LEL) are primary evidence of gas hazard inside a habitable structure. But even low (for example, less than 100 ppmv (0.01 % v/v, or 0.2 % of LEL) levels of methane, measured using sensitive gas detection equipment at cracks in slabs, conduits, or other entry pathways, are important in understanding the possible modes of methane intrusion into structures. An indoor air reading greater than 100 ppmv suggests a potential methane source and merits further evaluation.

7.2.4.2 *Confined Space Gas*—High concentrations of methane in smaller non-habitable confined spaces are also an important indicator of potential gas hazard at a site.

7.2.4.3 *Groundwater Dissolved Gas*—Methane samples are sometimes collected from water wells, either by sampling dissolved gases in groundwater or by measuring methane in water well head space. Groundwater samples may be taken under pressure and then depressurized in the laboratory with measurement of off gas and measurement of dissolved gas in the depressurized sample, giving an indication of the total dissolved methane in situ. Knowledge of groundwater pressure head at the point of sampling is also important in understanding the potential of the groundwater for methane off gassing.

7.2.5 *Field Measurements:*

7.2.5.1 *Soil Gas Speciation*—Instruments are commonly available to measure field gas pressure and concentrations of methane and non-methane combustible gases, carbon dioxide, oxygen, and hydrogen sulfide. Non-methane (VOC) combustible vapors can be measured using devices such as photoionization detectors, or VOCs can be subtracted from the total combustibles using activated carbon absorption filters at the sample intake stream of FIDs or catalytic or solid state devices. It is normal to take the bulk of data through field measurements and use laboratory techniques only to confirm selected field data or to perform analyses that cannot be done in the field.

7.2.5.2 *Vadose Gas Pressure*—Pressure measurements should be taken in the field. To take pressure measurements properly, it is necessary to have the soil gas monitoring well or probe equipped with a sampling valve. Normally, this will be some type of small labcock with a hose barb or quick-connect fitting. Pressure measurement equipment should be connected to the valve while it is still shut. Then the valve is opened to observe downhole pressure. If the valve is opened before the pressure measurement equipment is attached, the downhole pressures or vacuums may be lost through equilibration with atmosphere. Pressures encountered in the soil because of barometric lag conditions are typically well below 250 Pa. These pressures (positive or negative) are not remarkable with respect to methane flammability hazard. Pressures in excess of 500 Pa may be significant. Conversely, in tight, clayey soils, relatively high differential pressures may be encountered for relatively weak, localized sources which do not typically represent significant risk. As discussed in 4.2, all data should be evaluated in context of the CSM.

7.2.5.3 *Barometric Pressure*—Barometric pressure profiles are typically available from the national weather service on line and are acceptable for determining trends before, during, and after field-monitoring events. Barometric pressures and variations in barometric pressure may also be measured in the field using a variety of equipment designed for that use.

7.2.6 *Laboratory Analysis:*

7.2.6.1 Laboratory analysis is typically done to confirm field measurements and, therefore, is needed for only a limited number of samples. Laboratory analysis can also be done if field instruments are not available to measure the parameter of interest (for example, isotopic analysis).

7.2.6.2 Basic laboratory characterization of field samples includes:

(1) Soil Gas Speciation—Routine speciation should include gas chromatographic measurement of the concentrations of CH_4, O_2, and CO_2. Other gases of possible interest include: N_2, Ar, H_2, He, C_2H_6, C_2H_4, C_3H_8, i-C_4H_{10}, n-C_4H_{10}, i-C_5H_{12}, n-C_5H_{12}, and C6+. Consult laboratory for minimum sample concentrations and volumes necessary to conduct these tests.

(2) Biogas Production Rates—Biogas production rates may be predicted based upon laboratory studies.

(3) Soil Total Organics—Laboratory measurement of the total organic content of a soil sample from the source zone can give an indication of potential for methane generation.

(4) Soil Moisture Content—Laboratory measurement of soil moisture content is useful when calculation of the soil flow characteristics will be done.

(5) Soil Permeability—Laboratory measurement of the soil permeability is useful when calculation of the soil flow characteristics will be done. This can be done on an undisturbed sample or a remolded sample if the in-situ relative compaction of the soil is known. Note that flow characteristics can also be evaluated through field estimates of soil permeability (Falta, 1996) or purge and recovery tests.

(6) Soil Bulk Density or Soil Percent Relative Compaction—Bulk density is the unit weight of the soil per unit volume including the soil particles and moisture. Percent relative compaction is a related measure, commonly used in

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earthwork projects, defined as the ratio of the dry unit weight of soil in the field after compaction divided by the maximum dry unit weight measured in laboratory tests (for example, standard Proctor or modified Proctor). Either measurement can be useful when calculation of the soil flow characteristics will be done.

7.2.7 *Methane Sampling Containers:*

7.2.7.1 Primary concerns are: *(1)* container leakage and *(2)* problematic seals. Containers with silicone seals or a silicone septae should be avoided for methane use. Methane diffuses through silicone and is isotopically fractionated with fractionation becoming more problematic with longer holding times.

7.2.7.2 *Glass and Metals*—Glass and metals are preferred and are capable of long-term storage (for example, weeks or months).

7.2.7.3 *Bags*—Leakage is a far bigger concern with bags than with metal or glass containers. Holding times in Cali-5-Bond© bags[7] are generally considered to be on the order of several months. But even Tedlar© bags[8] can be used for storage of samples for several weeks with no significant change in their compositions. However, some types of sample bags are not suitable for collection of light hydrocarbons, even with short holding times. Some plastic containers (such as polyethylene) are semipermeable and should be avoided.

7.2.8 *Methane Sample Holding Times*—Restrictions on handling of gas samples and holding times are typically based on the type of sample containers used. Considerations for holding time include:

7.2.8.1 *Leakage*—Methane sample holding times are determined by the potential for container leakage or the potential for bacterial degradation of the sample. Short holding times, which are sometimes mandated by regulations, may not allow for transit of samples to a qualified laboratory. Holding times of weeks to years can be acceptable. Consult a qualified laboratory for specific container holding times.

7.2.8.2 *Bacterial Degradation*—For aerobic degradation of methane in a sample, three things are required: oxygen, water, and bacteria. If the samples contain a liquid (aqueous) phase and oxygen, bacterial oxidation can occur if bacteria are present. Samples taken from a warm saturated (that is, landfill gas) source may arrive at the laboratory containing free liquid condensate that forms in the sample container upon cooling of the sample. Bacterial degradation is uncommon if the moisture in a sample came only from condensation. Bacterial degradation can be a problem if containers that were previously contaminated with bacteria were reused.

7.2.8.3 *Bacterial Oxidation*—Bacterial oxidation can be a problem with dissolved gas samples and headspace samples in which there is a liquid (aqueous) phase present. Benzalkonium chloride bactericide is typically added to the samples before shipping to the laboratory. Consult the laboratory to determine appropriate amounts of bactericide and other sample preservation methods.

7.2.8.4 *Dry Samples*—For dry samples with no water, the holding time for methane or natural gas is entirely a function of the sample container and how the sample was collected. Gas samples have been stored in aluminum cylinders for nearly 20 years with no measurable change in their chemical or isotopic composition. Testing has shown that other sample container types have holding times ranging from weeks to years.

7.3 A bibliography is provided at the end of this standard. Other ASTM International standards relevant to evaluation of methane hazard in the vadose zone include Terminologies D653 and D1356 (terminology); Practices D2487, D5088, D6725, and D7663 (field methods); Practice D1946 and Test Methods D2216 and F1815 (laboratory methods).

8. Calculations

8.1 *Calculate Dead Volume*—Calculate the internal dead volume of sampling lines and other sampling components. The internal volume of items with circular cross sections can be calculated using the internal diameter (d) of the component and the length (L) of the component as follows:

$$V = \pi(d \;/\; 2)^2 \times L \tag{1}$$

8.2 *Measure Dead Volume*—Alternatively, the internal space of a sampling component or sampling assembly can be determined empirically by filling the void space with water and then carefully decanting the water into a graduated cylinder.

8.3 *Calculate Purge Time*—The time (τ) to change out one residence (purge) volume in an enclosure is calculated using the volume (V) and flow rate (Q) as follows:

$$\tau = V / Q \tag{2}$$

8.4 *Unit Conversions:*

8.4.1 *Conversions between ppbv and µg/m³*—For any ideal gas with molecular weight (MW), the conversions at 25°C are as follows:

$$C(\text{ppbv}) = C(\mu\text{g}/\text{m}^3) \times (24.45 \;/\; \text{MW}) \tag{3}$$

$$C(\mu\text{g}/\text{m}^3) = C(\text{ppbv}) \times (\text{MW} \;/\; 24.45) \tag{4}$$

8.4.1.1 The same equations can be used for conversions between mg/m³ to ppmv with the appropriate substitutions. For temperatures other than 25°C, the value of 24.45 should be adjusted. (See Note 1.)

NOTE 1—The conversion is based on the ideal gas law (see below) and standard temperature (0°C = 273K) and standard pressure (1 atmosphere = 760 mm Hg). The ideal gas law is:

$$PV = nRT$$

where:

P = pressure in atmospheres,
V = volume of gas (L),
n = moles of the gas (number of moles = mass/MW),
R = gas constant (0.082056 liter-atm/mole-K), and
T = temperature (K).

For one mole of gas ($n = 1$): (1 atm)(V) = (1)(0.0820)(273) and V = 22.4 L. In other words, one mole of any ideal gas occupies 22.4 L at standard temperature and pressure. At room temperature (25°C = 298K), the ideal gas law yields: (1 atm)(V) = (1)(0.0820)(298) and V = 24.45 L.

[7] The Cali-5-Bond© bag is covered by a patent. Interested parties are invited to submit information regarding the identification of an alternative(s) to this patented item to the ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend.

[8] The Tedlar© bag is covered by a patent. Interested parties are invited to submit information regarding the identification of an alternative(s) to this patented item to the ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend.

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For benzene, for example, one mole of gas (78.11 g) occupies 24.45 L, which is equal to 0.024 45 m^3. For pure gas, the concentration is 1 000 000 ppm. So: 1 000 000 ppm = 78.11 g/0.024 45 m^3 and 1 000 000 ppm = 3190 g/m^3.

Divide each side by 1 000 000 (which converts g to µg): 1 ppm = 3190 $µg/m^3$. Divide each side by 1000 to convert to part per billion: 1 ppb = 3.19 $µg/m^3$.

8.4.2 Conversion between various units of pressure. One atmosphere (atm) of pressure equals the following:

101325 Pa,
1013 mbar,
29.9 in. Hg,
1033 cm H_2O,
407 (in. H_2O) (in. w.c.),
14.7 psi, and
760 mm Hg (Torr).

8.4.3 *Conversion between Percent (on a volume basis) and ppmv*—For any gas, 1 % = 10 000 ppmv. So, the conversions are as follows:

$$C(\%) = C(\text{ppmv}) \times 0.0001 \quad (5)$$

$$C(\text{ppmv}) = C(\%) \times 10\,000 \quad (6)$$

9. Methane Reports and Documentation

9.1 *Data Records/Reporting Requirements*—The records or field logs that contain information, measurements, or readings (data) collected in the field before, during, and after data collection should be kept in order and made available to anyone who needs to review them in conjunction with final generation or report review or both. The data reports should contain, but are not limited to, the sample identifications (IDs); where the samples were collected; the depth at which they were collected; how they were collected; and any applicable field readings, such as purge volumes, sampling flow rates, differential pressure, and/or temperature.

9.2 *Purpose of Records*—Of primary concern is that records include the information necessary to describe the methods and results of the evaluation performed for a particular application. At a minimum, the information listed in 9.3 should be included.

9.3 *Minimum Information*—The test report should contain the following information:

9.3.1 A statement to indicate the confidentiality of the information supplied, if appropriate;
9.3.2 Executive summary;
9.3.3 Site description;
9.3.4 Site ownership and use;
9.3.5 Description of source areas;
9.3.6 Monitoring/testing program;
9.3.7 Vadose zone and/or confined space gas at site;
9.3.8 Evaluation of gas hazard at site;
9.3.9 Conclusions and recommendations;
9.3.10 *Figures*—Maps and photos;
9.3.11 *Tables*—Data and data comparisons.

9.4 *Field Notes*—Field notes may be included as an appendix to the site report:

9.4.1 Site name and address/location;
9.4.2 Name of technician(s) doing the sampling;
9.4.3 Name and affiliation of other persons participating in the fieldwork;
9.4.4 Date and time(s) of sampling;
9.4.5 *Weather*—Sunny or cloudy, humidity, precipitation, temperature, and wind; barometric pressure trend leading up to the field event and where in the trend the field measurements occurred;
9.4.6 Locations of sampling (accompanied by sketch);
9.4.7 Sample location identification names, numbers, and depths;
9.4.8 Manufacturer/model number of field equipment for gas concentrations/pressures;
9.4.9 Pre-monitoring calibration check and post-monitoring check, as appropriate;
9.4.10 Initial pressure/vacuum measurements, units (inches-water and so forth);
9.4.11 Lower/upper detection limit;
9.4.12 Concentrations of each target analyte, units (ppm, % LEL, %, and so forth);
9.4.13 Initial concentration;
9.4.14 Peak concentration, purge time;
9.4.15 Steady concentration, purge time;
9.4.16 Lower/upper detection limits of equipment; and
9.4.17 Comments/remarks (unusual or notable observations).

9.5 *Laboratory Report*—The laboratory report may be included as an appendix to the site report:

9.5.1 Chain of custody;
9.5.2 Site name;
9.5.3 Laboratory name;
9.5.4 Date of analysis;
9.5.5 Name of analyst;
9.5.6 Instrument identification;
9.5.7 Sample location identification names, numbers, and depths;
9.5.8 Analyte list and QA/QC data;
9.5.9 Concentrations or other results of each analysis;
9.5.10 Laboratory QC limits; and
9.5.11 Notes or explanation of any outliers.

10. Keywords

10.1 hazard; measurement; methane; soil gas; vadose zone

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APPENDIXES

(Nonmandatory Information)

X1. METHANE CHARACTERISTICS: PHYSICAL AND CHEMICAL PROPERTIES, TOXICOLOGICAL ASSESSMENT SUMMARY, AND HAZARD

X1.1 Introduction

X1.1.1 Methane gas concentrations are typically expressed as percent volume (that is, methane in air), percentage of the lower explosive limit (LEL), or parts per million by volume. A value of 100 % LEL is the same as 5 % v/v and 50 000 ppmv (see Table X1.1).

X1.1.2 A basic understanding of physical and toxicological properties is a key component in the evaluation of chemical risk and hazard.

X1.1.3 This appendix provides a basic introduction to the physical, chemical, and toxicological characteristics of methane and is focused on the information that is most relevant to assessing potential impacts caused by the release of methane to shallow subsurface soils and in transport of methane from the shallow subsurface to surface and subsurface enclosed spaces. Much of the information is summarized from listed references.

X1.2 Referenced Documents

X1.2.1 *ANSI Standards:*[9]

ANSI/API RP 505 Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities

ANSI/GPTC Z380 Guide for Gas Transmission and Distribution Piping Systems

X1.2.2 *NFPA Standards:*[10]

NFPA 30 Flammable and Combustible Liquids Code

NFPA 70 National Electric Code

NFPA 497 Recommended Practice for the Classification of Flammable Liquids, Gases or Vapors and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas

X1.2.3 *Federal Standards:*[11]

29 CFR Section 1915.12(b)(3) Confined and Enclosed Spaces and Other Dangerous Atmospheres

29 CFR Section 1019.146(b)(1) Permit-required Confined Spaces

30 CFR 57.22001 Safety Standards for Methane in Metal and Nonmetal Mines

30 CFR § 57.22003 MSHA Illustration 27

40 CFR 258.23 Explosive Gases Control

X1.3 Overview of Methane Characteristics

X1.3.1 The specific characteristics for methane are referred to in the following sections of this appendix:

X1.3.1.1 *Physical and Chemical Properties*—See X1.4.

X1.3.1.2 *Toxicity Summary*—See X1.5.

X1.3.1.3 *Flammability Summary*—See X1.6.

X1.3.1.4 *Sources and Generation of Methane*—See X1.7.

X1.3.1.5 *Transport and Degradation of Methane in Soils*—See X1.8.

X1.4 Physical Properties of Methane

X1.4.1 Descriptive information and basic physical properties of methane are listed in Table X1.2.

X1.4.1.1 *Henry's Law Coefficient*—The equilibrium partition of a soluble chemical between an aqueous solution and the vapor phase is determined by the Henry's Law constant, H. In consistent units, the ratio of the chemical concentration in the vapor phase, c_v, (moles/L-air) to that in the aqueous phase, c_w, (moles/L-water) ratio is given by $H = c_v/c_w$, or, in terms of the vapor partial pressure P_v (atm), aqueous concentration (mol/m^3), and H' (atm-m^3/mol), $H' = P_v/c_w$, where $H'/(R \cdot T) = H$, T (K) is the equilibrium temperature and $R = 8.20562 \times 10^{-5}$ (m^3·atm / mol·K) is the gas constant. Henry's law is limited to low concentrations, that is, concentrations for which the mole fraction in water is small and ideal gas assumptions apply for the vapor phase. Henry's law coefficient at 25°C is included in Table X1.2. Values for Henry's law coefficient from a number of empirical data sets **(8)**[12] as a function of temperature are summarized in Table X1.3.

X1.4.1.2 *Aqueous Solubility*—The aqueous solubility of a chemical in water is defined as the maximum amount of the chemical that will dissolve in pure water at a specified temperature. Solubility is a thermodynamic property. Methane is a gas at nominal environmental temperature and pressure, therefore, aqueous solubility depends on both temperature and the partial pressure of methane. The aqueous solubility of

[9] Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, http://www.ansi.org.

[10] Available from National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02269, http://www.nfpa.org.

TABLE X1.1 Methane Gas Concentrations

%CH_4	PPMV	% LEL	Remarks
0.00001	0.1	–	Laboratory
0.0005	5	0.01	Flame ionization detector (FID)
0.05	500	1	Catalytic detector accuracy
1.25	12 500	25	Example indoor air action level
5	50 000	100	Lower explosive limit
14	140 000	–	Upper explosive limit (UEL)
100	1 000 000	–	Pure methane

[11] Available from U.S. Government Printing Office, Superintendent of Documents, 732 N. Capitol St., NW, Washington, DC 20401-0001, http://www.access.gpo.gov.

[12] The boldface numbers in parentheses refer to a list of references at the end of this standard.

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TABLE X1.2 Physical Properties of Methane

Physical Property	Value	Reference
Chemical name	Methane	
Synonyms	Fire damp, marsh gas, Refrigerant 50, methyl hydride	
Chemical Abstracts Service Registration Number (CAS RN)	74-82-8	
Molecular formula	CH_4	
Molecular weight, *MW*	16.04 g/mol	
Molecular diffusion coefficient in air, D_{air}	D_{air}: 0.217 cm^2/s (experimental, at 25°C, 1 atm)	Cowie and Watts (3)[A]
Molecular diffusion coefficient in water, D_{water}	1.88E-5 cm^2/s (experimental, at 25°C)	Witherspoon and Saraf (4)
Organic carbon to water partition coefficient, K_{oc}	90 L-wat/kg-oc	HSDB (5)
Octanol to water partition coefficient, K_{ow}	12.3 L-water/kg-octanol (experimental)	US EPA (6)
Henry's law coefficient, *H*	0.658 atm-m^3/mol (experimental, at 25°C)	US EPA (6)
Vapor pressure, P_v	466 000 mmHg, 613.2 atm (experimental, at 25°C)	US EPA (6)
Aqueous solubility limit, *S*	22 mg/L (experimental, at 25°C)	US EPA (6)
Melting point, T_{mp}	-182.4 °C	Daubert and Danner (7)
Boiling point, T_{nbp}	-161.5 °C (at 1 atm)	Daubert and Danner (7)
Critical temperature	-82.6 °C	Daubert and Danner (7)
Critical pressure	34495 mmHg, 45.4 atm	Daubert and Danner (7)
Lower flammability limit, X_{LFL}[B]	4.4%v in air	Daubert and Danner (7)
Upper flammability limit, X_{UFL}[B]	16.5 %/v in air	Daubert and Danner (7)

[A] The boldface numbers in parentheses refer to the list of references at the end of this standard.
[B] The flammability range for methane is typically taken as 5–15%.

TABLE X1.3 Henry's Law Coefficient for Methane

T(°C)	Lide and Frederikse (9)	Dean (10)	Kavanaugh and Trussell (11)	Wilhelm, Battino, et al (12)
	H(atm-m^3/mol)			
5	0.479	0.480	0.492	0.468
10	0.531	0.542	0.552	0.521
15	0.585	0.609	0.616	0.579
20	0.643	0.681	0.685	0.640
25	0.705	0.759	0.759	0.705
30	0.770	0.844	0.839	0.775
35	0.839	0.934	0.924	0.848
40	0.912	1.030	1.014	0.927
45	0.988	1.134	1.110	1.009

methane is shown in Table X1.4 using values of Henry's law coefficient from Table X1.3 with the partial pressure of methane equal to 1 atm.

X1.4.2 Methane (or other gas concentration) values quoted on a volume basis (% v/v or ppbv) require conversion based on the average molecular weight and composition of the vapor to a mass concentration basis (μg/m^3).

$$(ppbv) = C_{CH4}\left(\frac{\mu g}{m^3}\right) \times \frac{R \times T}{MW\left(16.04\ \frac{g}{mol}\right) \times P} = C_{CH4}\left(\frac{\mu g}{m^3}\right) \times \frac{24.45}{16.04\frac{g}{mol}} \quad \text{(X1.1)}$$

$$c_{CH4}\left(\frac{\mu g}{m^3}\right) = X_{CH4}(ppbv) \times \frac{MW\left(16.04\ \frac{g}{mol}\right) \times P}{R \times T} = X_{CH4}(ppbv) \times \frac{16.04\frac{g}{mol}}{24.45} \quad \text{(X1.2)}$$

where:

X_{CH4} = concentration of methane as a volume fraction (ppbv),
C = mass concentration,

TABLE X1.4 Aqueous Solubility for Methane at Pressure of 1 atm

	Depth below Water Table (Unconfined Aquifer)								
Depth, ft	0	3.3	6.6	9.8	16.4	32.8	65.6	98.4	164.0
Depth, m	0	1	2	3	5	10	20	30	50
Temperature, °C	Water-Saturated Methane Concentration (mg/L-water)								
5	33.3	36.6	39.8	43.0	49.5	65.6	97.9	130.1	194.7
10	29.8	32.7	35.6	38.5	44.3	58.7	87.6	116.5	174.2
15	26.8	29.4	32.0	34.6	39.8	52.7	78.7	104.6	156.5
20	24.2	26.5	28.8	31.2	35.8	47.5	70.9	94.3	141.0
25	21.8	24.0	26.1	28.2	32.4	43.0	64.1	85.3	127.6
30	19.8	21.7	23.7	25.6	29.4	39.0	58.2	77.4	115.8
35	18.1	19.8	21.5	23.3	26.8	35.5	53.0	70.5	105.4
40	16.5	18.1	19.7	21.3	24.5	32.4	48.4	64.3	96.2
45	15.1	16.6	18.0	19.5	22.4	29.7	44.3	58.9	88.1
	Partial pressure of methane = total pressure								

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R = gas constant,
T = temperature,
P = pressure, and
MW = molecular weight.

X1.5 Toxicity Summary of Methane

X1.5.1 Methane acts as a simple asphyxiant when inhaled (**13**, **14**). Asphyxiants displace oxygen in the air and can cause symptoms of oxygen deprivation (asphyxiation). Simple asphyxiants include, among others, carbon dioxide (CO_2), helium (He), and gaseous hydrocarbons (that is, methane, CH_4; ethane, C_2H_6; propane, C_3H_8; and butane, C_4H_{10}).

X1.5.1.1 Toxicity of a simple asphyxiant is related to the severity of displacement of ambient oxygen and the duration of exposure. The available oxygen should be a minimum of 18 % or harmful effects will result.

X1.5.1.2 Methane as an initially pure chemical displaces oxygen to 18 % in air when present at 14 % (140 000 ppm). Methane is not expected to cause unconsciousness (narcosis) as a result of central nervous system depression until it reaches much higher concentrations (30 % or 300 000 ppm), well above the lower explosive limit and asphyxiating concentrations.

X1.5.1.3 Therefore, acute toxicity of narcosis/oxygen deprivation occurs in the range of 140 000- to 300 000-ppm methane.

X1.5.1.4 ACGIH (**15**) has recommended a threshold limit value of exposure for methane at 5000 ppm (based on no effect in animals at 10 000 ppm, divided by an uncertainty factor of two). Because this no observable effect level (NOEL) is based on an absence of response, not on observed toxicity, we discount it in this summary.

X1.5.2 The lower flammability limit, X_{LFL}, of methane (5 %v, 50 000 ppm) in air is much lower than any toxicity-based concentration level. Potential flammability of methane in air and the potential for fire or explosion is, therefore, the primary hazard of methane to people, as well as the primary hazard to property.

X1.6 Flammability of Methane

X1.6.1 Measures of flammability are based on measured flame propagation in a test cell of specific design and geometry.

X1.6.2 Comprehensive measures of methane flammability are included in Zabetakis (1965), as indicated in Fig. X1.1(a), as a function of methane, oxygen, and nitrogen (inert gas) concentrations, at 1 atm. The methane flammability range in air is illustrated as a function of spark energy in Fig. X1.1(b).

X1.6.2.1 Flammability depends on methane concentration, oxygen concentration, gas temperature, and ignition energy.

X1.6.2.2 Initiation of a fire or explosion for a flammable gas in air varies from the specific measured flammability limit ranges.

X1.6.3 In ambient air with oxygen at 21 %v, flammability is defined by a lower flammability limit (X_{LFL}) and upper flammability limit (X_{UFL}).

X1.6.4 The X_{LFL} value is the lower limit concentration in open air that will support a flame. Zabetakis (**16**) compiles values of chemical-specific X_{LFL}. The X_{LFL} on a mass concentration basis for methane is 38 g/m^3.

X1.6.4.1 Values of X_{LFL} for >C3 hydrocarbons nominally range from 45 to 52 g/m^3-air.

X1.6.4.2 The X_{LFL} value applies in ambient air with oxygen within the normal range (21 % v/v). No adjustment of X_{LFL} for other atmospheres (reduced or increased oxygen or temperature) is included in the defined X_{LFL}.

X1.6.5 Flammability for chemical mixtures, including methane and petroleum vapors, follows Le Châtelier (**17**) with $X_{LFL\text{-}i}$ (v/v) of constituent flammable chemicals (volume/volume) and x_i (mol/mol) as mole fractions (volume fractions) of hydrocarbon fuel constituents (including methane).

$$X_{LFL-n}(\mathrm{v/v}) = \frac{1}{\frac{x_1}{X_{LFL-1}} + \frac{x_2}{X_{LFL-2}} + \cdots + \frac{x_n}{X_{LFL-n}}} \quad \text{(X1.3)}$$

X1.6.5.1 Only flammable chemicals are included in the summation. No unusual compounds and no inhibitors are presumed.

X1.6.5.2 Source methane gas present with nonflammable gases (such as nitrogen and carbon dioxide) will mix with air within flammable limits to a narrower range of dilutions than pure methane. The effect on flammability levels of varied levels of methane and oxygen is shown in 30 CFR § 57.22003, MSHA Illustration 27, [http://www.msha.gov/30cfr/57.22003.htm], see Fig. X1.2.

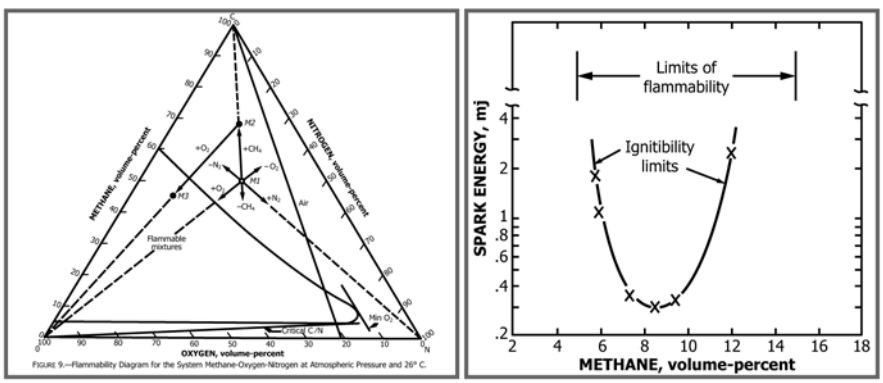
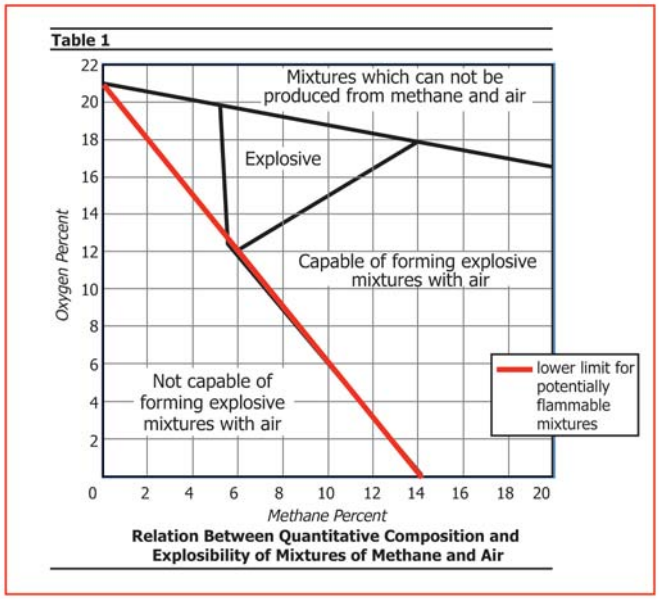


FIG. X1.1 Diagrams for Methane Flammability from Zabetakis (16) where (a) Flammable Range of Methane, Oxygen, and Nitrogen and (b) Flammable Range in Air (21 %v O_2) Versus Ignition Spark Energy

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NOTE 1—The straight red line illustrates varied mixture ratios of source methane gas (for example, soil gas;14.1 %v methane) with ambient air (21 %v oxygen) and defines the lowest concentration (14.1 %v) of methane that can be diluted with air to form a flammable ("explosive") mixture in air.

FIG. X1.2 Flammability Levels of Methane and Oxygen (from 30 CFR § 57.22003, MSHA Illustration 27)

X1.6.6 Source methane gas (for example, methane in soil gas) must exceed 14.1 %v methane to dilute (with ambient air) into the flammable range.

X1.6.6.1 Soil gas with methane at concentration levels at above a few percent (>1 to 2 %) is generally completely anoxic (no oxygen) as a result of microbial activity in soil.

X1.6.6.2 Mixing anoxic soil gas (no oxygen) with air (21 %v oxygen) lowers the oxygen level in the resultant mixture.

X1.6.6.3 To interpret Fig. X1.2, for example, mixtures of ambient air (21 %v oxygen, 79 %v inert) with soil gas (14.1 %v methane, 85.9 %v inert) within the range of all possible dilution ratios will fall on the straight red line in the figure. This shows that methane concentrations in soil gas are required to be greater than 14.1 %v for the soil gas to dilute (with ambient air) into the flammable ("explosive") range.

X1.6.6.4 Fig. X1.2 is consistent with the flammable range from Fig. X1.1.

X1.6.6.5 The 14.1 %v methane in soil gas criteria neglects biodegradation of methane as it migrates through aerobic soil. In Table X1.5, the results are shown of several relevant published examples showing methane decreasing from, at, and near this soil gas concentration (5 to 14 %v) to levels below potential concern in soil, within 1 to 2 ft (0.3 to 0.6 m) of soil, below building foundations. This substantial attenuation is attributed to aerobic methane degradation.

X1.6.7 Methane within the void of a soil gas matrix is not flammable.

X1.6.7.1 The quenching distance is the minimum tube diameter through which a laminar flame will propagate. At tube diameters less than the quenching distance, the rate of heat removal by the ambient temperature tube walls is greater than the rate of heat generation, and the flame will not propagate. The quenching distance for flammable mixtures of methane in air is approximately 1.8 mm.

TABLE X1.5 Methane Degradation

Site Specifics	Methane Depletion	Location	Reference
0-cm depth change below a slab on grade home overlying residual petroleum non-aqueous phase liquid (NAPL)	From 14 %v (source depth was 1.8 m) to near 0 %v (non-detect).	Santa Maria, CA	Lundegard et al (18)
20 cm, below a slab-on-grade building at a gasoline service station building	From 35 g/m^3-air (5.2 %v, source depth was 0.6 m) to non-detect (0.15 %)	Alameda Naval Air Station, Alameda, CA	Fischer et al (19)

X1.6.7.2 The maximum safe experimental gap (MSEG) is a standardized test for measuring flame propagation through cracks or gaps. It is somewhat more stringent than the quenching distance. Methane is regarded as having an MSEG of 1.14 mm (**20**).

X1.6.7.3 Soils with pore diameters less than either the quenching distance or the MSEG will not propagate a flame.

X1.6.8 Criteria levels for screening the presence of potential flammability in open air are conservatively defined at a fraction of the X_{LFL}.

X1.6.8.1 A value of 10% X_{LFL} is an applicable screening criteria for occupied enclosed spaces (for example, US 29 CFR Section 1915.12(b)(3) , US 29 CFR 1910.146(b)(1)).

X1.6.8.2 Twenty-five percent X_{LFL} is applied in electrical classification (ANSI/API RP 505-1998; NFPA 30).

X1.6.8.3 Criteria for methane in subsurface mines (US 30 CFR 57.22001), range from 0.25 to 2.5 % methane (or approximately, 5 to 50 % X_{LFL} for methane), with varied responses depending on the monitored level.

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X1.6.9 Criteria levels for screening soil gas based in the potential for flammable conditions in open air follow:

X1.6.9.1 U.S. Federal regulations indicate the 100 % X_{LFL} criteria for methane are not to be exceeded at the boundary of municipal solid waste landfills (**21**) (40 CFR 258.23).

X1.6.9.2 ANSI/GPTC Z380 includes extensive guidance on leak investigation, classification, and action criteria (Grades 1, 2, and 3). Natural gas (methane—lighter than air) and petroleum gas (heavier than air) are included. For selected comparative purposes, criteria for a leak that represents an existing or probable hazard (Grade 1) are set at >60 % of the X_{LFL} within a confined space. For a nonhazardous but probable future hazard (Grade 2), a criteria is set at >40 % X_{LFL} in soil gas under a sidewalk or wall-to-wall paved area. Many states have adopted the ANSI/GPTC Z380 Guide.

X1.6.9.3 Operating retail service stations, other petroleum installations, and natural gas installations include controlled areas defined as "hazardous locations." These are defined as areas within which ignitable concentrations of flammable vapors may exist in air all or some of the time under normal operating conditions [NFPA 30, (**22**), NFPA 497, NFPA 70, NFPA 497]. Engineered systems within these "hazardous locations" are designed for the presence of flammable vapors during normal operations; this should be considered in a response to the presence of flammable vapors.

X1.7 Sources of Methane in the Environment

X1.7.1 Methane is the principal constituent of natural gas.

X1.7.1.1 It occurs in natural petroleum and gas reservoirs,; methane hydrates in arctic regions and marine sediments and volcano emissions.

X1.7.1.2 It is a product of petroleum refining and natural gas processing; transported in underground pipelines and distribution systems; and a constituent of heating, illuminating, and cooking gas.

X1.7.2 Biogenic methane is a product of microbial degradation.

X1.7.2.1 Methane is released to the environment as natural emissions from biodegrading animal and plant wastes. Sources include bogs, swamps, and sediments; from animals (ruminants); and during the growing of rice. Biogenic methane is produced from coal, oil, and kerogen over geological time frames in reservoirs and mineral deposits and in biodegradation of anthropogenic releases of oil and other organic matter to the environment.

X1.7.2.2 Anaerobic fermentation of cellulose, hemicelluloses, polysaccharides, other organic molecules, to form CO_2, H_2, and organic acids, including acetate (or acetic acid).

X1.7.2.3 Microbes (methanogens) carry out one or both of the following reactions to produce methane under strictly anaerobic conditions (**23**).

$$CH_3COOH \rightarrow CH_4 + CO_2 \quad (X1.4)$$

$$CO_2 + H_2 \rightarrow CH_4 + 2H_2O \quad (X1.5)$$

X1.7.2.4 Biogenic methane generation results in a net molar volume increase from reactants to products. This can result in a net advective soil gas flow.

X1.7.3 Thermal methane may be produced from heated organic matter. Methane is a product of partial combustion.

X1.7.3.1 Thermal methane may occur in petroleum reservoirs, originating from hydrocarbons and kerogens at elevated temperatures over geological time periods.

X1.7.3.2 Thermal methane also occurs in petroleum processing, organic synthesis, and coking.

X1.8 Transport and Degradation of Methane in the Subsurface

X1.8.1 *Aerobic Biodegradation:*

X1.8.1.1 Methane is oxidized by methanotrophs in soils (**23**).

$$CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O \quad (X1.6)$$

X1.8.1.2 Environmental biodegradation rate of methane in aerobic soils, based on measured data, shows a geometric mean first-order water phase degradation rate of 53/h, with a measured range between 0.31 to 190/h.

X2. TECHNICAL BACKGROUND—SCREENING LEVELS

X2.1 Introduction

X2.1.1 The decision matrix presented in Table 1 of this standard is based on Eklund (**24**), an evaluation of historic methane incidents which supported the decision points in the matrix, and a comparison with regulatory guidance regarding the use of differential pressure (for example, California DTSC). Screening levels for shallow soil gas are provided in the decision matrix that include several points of departure, including methane concentrations within soil gas at 0.05 (5 % v/v) and 0.30 (30 % v/v) and differential pressures from the subsurface to atmosphere of 500 Pa (2 in. H_2O) or less. This appendix provides additional support for the screening levels through the use of modeling. Modeling parameters provided in Table X2.1 are based on Eklund (**24**).

X2.1.2 *Flammability Criteria*—The hazard criteria is not exceeded if methane concentration does not exceed a specified fraction of the lower flammability limit concentration of methane within the interior volume of the enclosed space. The criterion is applied directly at points within the enclosed space. The flammability criteria for methane is specified as ($X_{CH_4,LFL}$·ε) with $X_{CH_4,LFL}$ = 0.054 (5.4 %v/v) in ambient air (**25**). In some of the examples of this section, ε = 0.10 is selected as an fractional multiplying factor, applicable for an occupied enclosed space [for example, US 29 CFR Section 1915.12(b)(3) Confined and Enclosed Spaces and Other Dangerous Atmospheres, US 29 CFR Section 1910.146(b)(1) Permit-required Confined Spaces]. A value of ε = 1.0 is applied in other examples. Other fractional multiplying factors may apply in different enclosure classifications. See Appendix X1.

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TABLE X2.1 Estimated Limiting Methane Fluxes and Flows into an Enclosure to Yield Methane Lower Flammability Limits or Fractions Thereof

Case	Methane Flammability Limit $X_{CH4,\ LFL}$ (m^3/m^3)	Safety Factor (–)	Enclosure Flammability Criteria $\cdot X_{CH4,\ LFL}$ (m^3/m^3)	Enclosure Air Exchange Rate ER (1/h)	Foundation Area in Contact with Soil A (m^2)	Mixing Height L_{mix} (m)	Enclosure Volume V (m^3)	Building Air Flow Q_{bldg} (m^3/h)	Methane Volume Flow $Q_{bldg}\cdot\cdot X_{CH4,\ LFL}$ (m^3/h)	Methane Volume Flux (m^3/m^2-h)	Methane Volume Flux (L/100 m^2-min)	Methane Molar Flux (g-mol /m^2-s)
Lower Range Limits												
1	0.054	0.1	0.0054	0.25	100	2.4	240	60	0.324	0.00324	5.4	3.8E-5
2	0.054	1	0.054	0.25	100	2.4	240	60	3.24	0.0324	54	3.8E-4
Upper Range Limits												
3	0.054	0.1	0.0054	1	100	2.4	240	240	1.296	0.01296	21.6	1.5E-4
4	0.054	1	0.054	1	100	2.4	240	240	12.96	0.1296	216	1.5E-3

X2.1.3 *Relation to Surface Emission Flux:*

X2.1.3.1 Concentration within an enclosure is estimated with a balance of gas flow into and out of the enclosure. Methane into the enclosure is presumed to originate through the enclosure surface in contact with soils or through cracks or penetrations in the enclosure in contact with soils and to exit the enclosure through air exchange to the outdoors through openings such as walls, ceilings, windows, and doors. Methane concentration is presumed zero in outdoor air. The enclosure concentration is:

$$X_{CH_4,e} = X_{CH_4,f}\cdot\frac{1}{\frac{L_{mix}\cdot ER}{\left(\frac{N^T_{CH_4}}{X_{CH_4,f}}\right)\cdot\left(\frac{R\cdot T}{P}\right)}+1} \quad (X2.1)$$

where:

$X_{CH_4,e}$ = enclosure methane concentration as a volume fraction (m3/m3) or mole fraction (mol/mol) of methane in indoor air,

$X_{CH_4,f}$ = methane concentration entering the building envelope from below the soil cap or enclosure foundation,

$N^T_{CH_4}(g-mol/m^2-s)$ = molar flux of methane into the enclosure from soils,

L_{mix}(m) = mixing height or volume to surface area ratio for the enclosure (L_{mix} = *V*/*A*), and

ER (1/s) = volumetric air exchange rate for the enclosure.

X2.1.3.2 The total molar flux, including methane and other gases and vapors, through the foundation and into the enclosure is:

$$N^T_{total} = \left(N^T_{CH_4}/X_{CH_4,f}\right) \quad (X2.2)$$

where:

$(R\cdot T\ /\ P)$ = molar volume (m^3/g-mol) based on the ideal gas law with temperature, *T*; total pressure, *P*; and ideal gas constant, *R* and

$\left(N^T_{CH_4}/X_{CH_4,f}\right)\cdot(R\cdot T\ /\ P)$ = total volumetric flow into the foundation including methane and other gases and vapors.

X2.1.3.3 With methane-only soil gas flow, $X_{CH_4,f}=1$ and $N^T_{total}=N^T_{CH_4}$ for:

$$X_{CH_4,e} = \frac{1}{\frac{L_{mix}\cdot ER}{N^T_{CH_4}\cdot\left(\frac{R\cdot T}{P}\right)}+1} \quad (X2.3)$$

X2.1.3.4 If flow out of the soil is a small fraction of the total enclosure flow:

$$X_{CH_4,e} = N^T_{CH_4}\cdot\left(\frac{R\cdot T}{P}\right)\cdot\left(\frac{1}{L_{mix}\cdot ER}\right) \quad (X2.4)$$

X2.1.3.5 Flux values may be specified as volumetric flux (m^3/m^2-s), $u_{v,CH_4}=(R\cdot T\ /P)\cdot N^T_{CH_4}$ or mass flux (g/m^2-s), $J_{CH_4}=MW_{CH_4}\cdot N^T_{CH_4}$. Total methane flow is the flux multiplied by the area of the foundation in contact with soil, *A*. Volume fraction (and mole fraction) may be presented as a mole concentration (g-mol/m^3), $(X_{CH_4}\cdot(P/\ R\ T))$, or a mass concentration (g/m^3), $c_{CH_4}=X_{CH_4}\cdot MW_{CH_4}\cdot(P/\ R\ T))$.

X2.1.4 *Relationship between Enclosure Concentration and Surface Emission Flux*—Hers et al (**26**) specify high and low ranges of parameters for residential houses. These parameters are typical for many occupied enclosures, including basements and crawlspaces. The limiting ranges of methane emission flux into an enclosure are shown in Table X2.1 for this range of enclosure parameters. The more stringent flux criteria, Cases 1 and 2, are for the lower building air flow.

X2.2 Estimate of Methane Hazard Screening Criteria in Soil Gas

X2.2.1 *Flammability Criteria:*

X2.2.1.1 Potential flammability of soil gas methane is evaluated by applying a flammability criterion within an enclosure or at the interface between open air (outdoors or within an enclosure) and the top of the soil, soil cap, or foundation interface. Soil gas concentration and differential pressure screening values within the soil matrix are estimated based on soil properties and the imposed surface methane concentration criteria using soil gas transport models. We consider several similar scenarios, with a subsurface source of methane:

(1) An open soil surface,

(2) An intact low-permeability cap or building foundation (concrete, asphalt, clay, and so forth) in contact with the soil, and

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(3) A cracked low-permeability cap or building foundation in contact with the soil.

X2.2.1.2 The scenarios and geometries are illustrated in Fig. X2.1. In these cases, Scenario 1 for a homogeneous soil layer is a simplification of Scenario 2, for which the upper surface is a low-permeability and low-diffusion coefficient cap. Scenario 3 in these examples and the included estimates is considered in a one-dimensional geometry with average parameters for the cracked cap. More complex estimates may include two- or three-dimensional representations; these may be more useful in

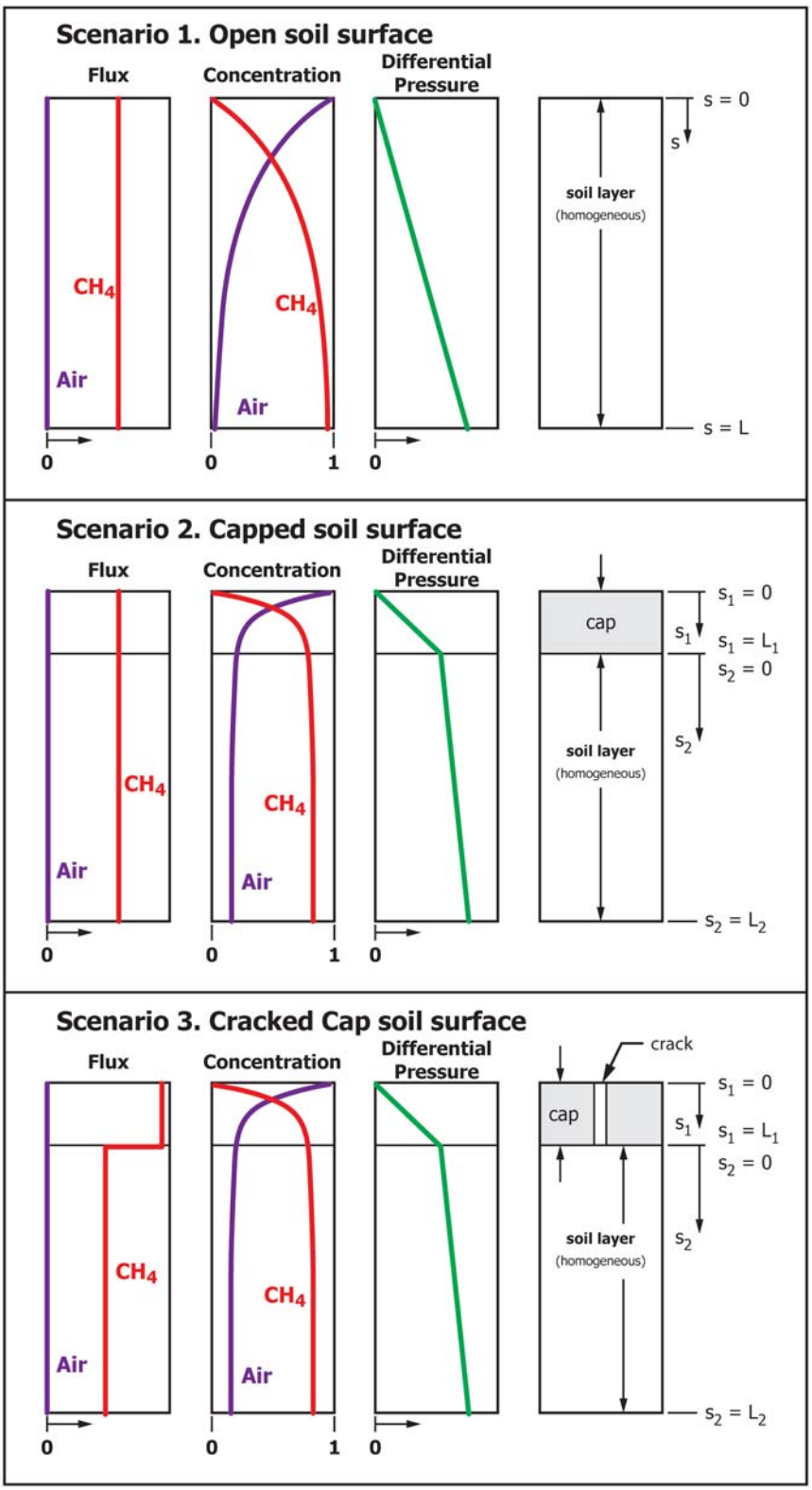


FIG. X2.1 Scenarios for Methane Flammability Hazard Screening

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some site-specific evaluations, rather than the one-dimensional screening estimates that are presented herein.

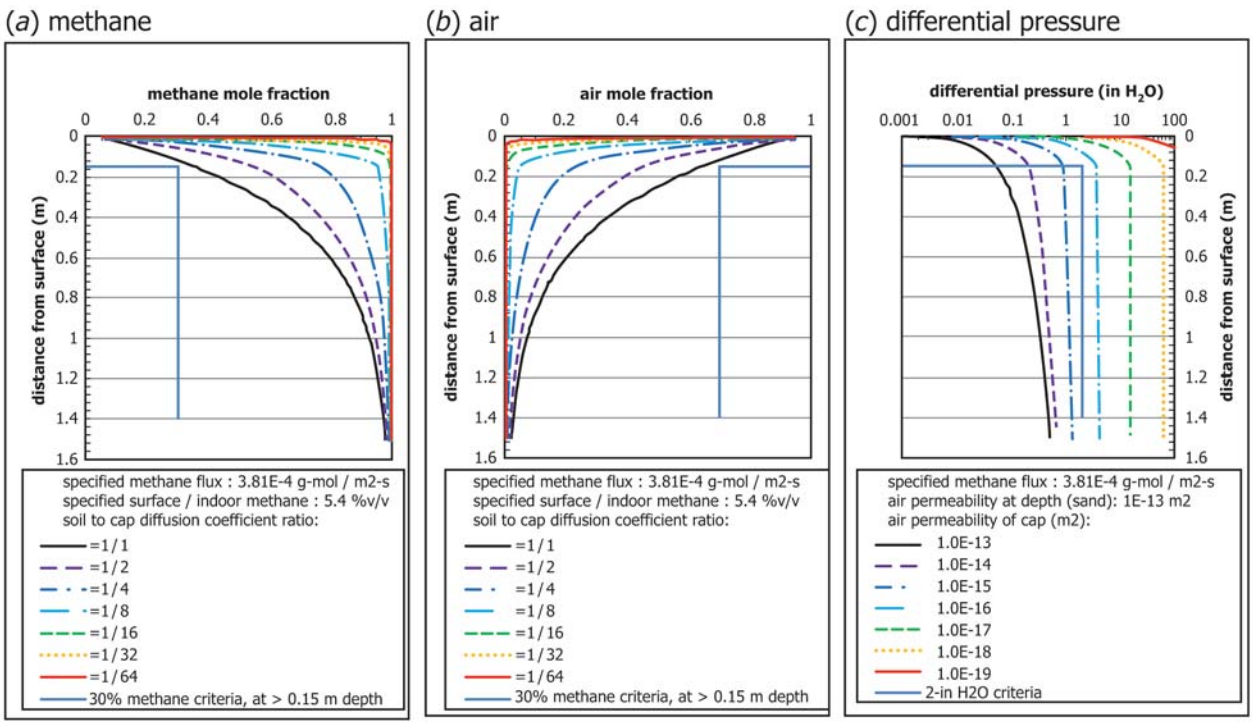
X2.2.2 *Soil Gas Concentration and Pressure Criteria:*

X2.2.2.1 *Comparison to Algebraic Model Estimates*—Estimates have been calculated using a presumption of binary soil gas flow (air and methane) using a simplified 'dusty gas' model (**27**), as developed and discussed in a later section of this appendix. Biogenic reaction of methane with oxygen is neglected in this model. Neglecting aerobic biodegradation of methane in soil is a conservative assumption.

X2.2.2.2 Two cases are calculated. Case 1 (from Table X2.1) applies a 100 % lower flammability limit (LFL) methane concentration inside the enclosure and at the soil surface, along with a constant methane flux through soil of 3.8E-5 g-mol /m^2-s. Case 2 (from Table X2.1) applies a 10 % LFL methane concentration inside the enclosure and at the soil surface, along with a constant methane flux through soil of 3.8E-4 g-mol /m^2-s. The modeled soil gas concentration profiles have been calculated for a homogeneous sand layer, as well as a range of capping materials with the diffusion coefficient for the cap specified as a fraction of the diffusion coefficient for porous sand. The calculated differential pressure profile is also shown in Fig. X2.2 and Fig. X2.3 for specified values of the cap permeability. The resulting soil gas profiles for methane and air, and differential pressure, are shown for these scenarios in Fig. X2.2 and Fig. X2.3. Relevant model parameters are included in Table X2.2.

X2.2.2.3 Eklund (**24**) proposed screening levels for shallow soil gas that include several points of departure, including methane concentrations within soil gas at 0.05 (5 % v/v) and 0.30 (30 % v/v) within the soil gas matrix and differential pressures from the subsurface to atmosphere of 2 in. H_2O or less. The model estimates are compared to these screening values to better bound their range of applicability.

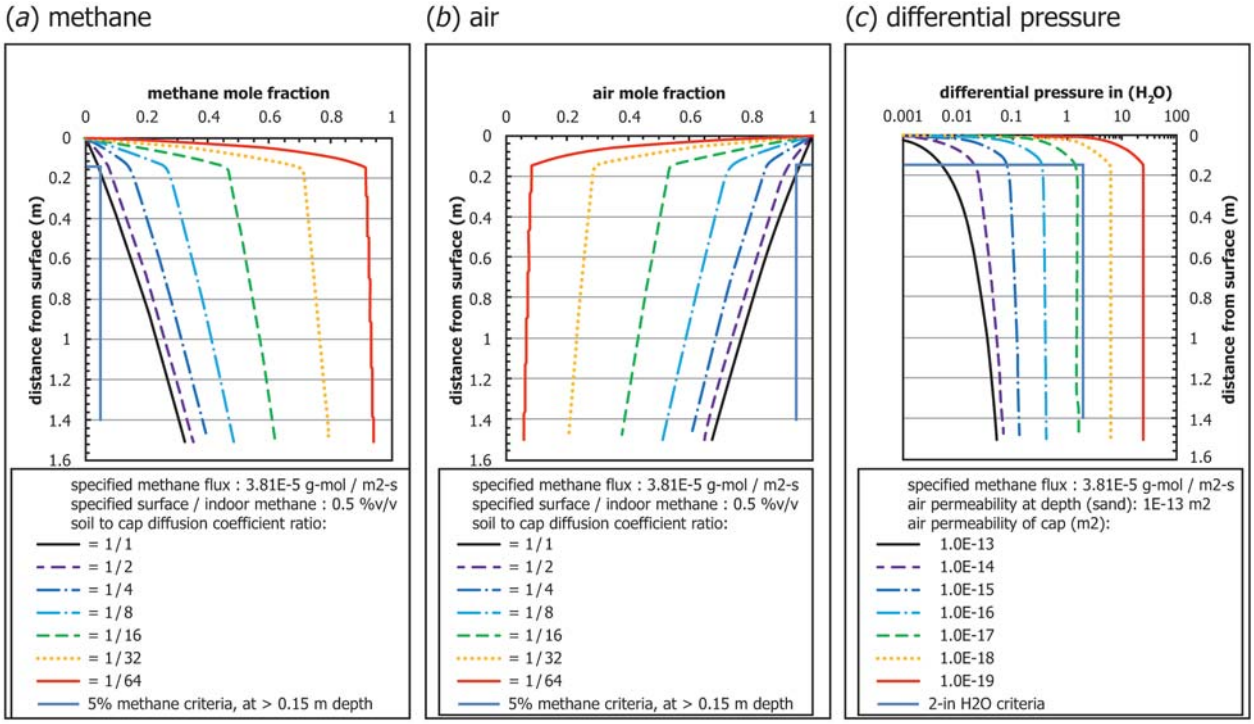
X2.2.2.4 The upper range soil gas screening level of 0.30 (30 % v/v) methane is a conservative indicator for the 100 % LFL criteria within a low-airflow enclosure (Fig. X2.2). The lower range soil gas screening level of 0.05 (5 % v/v) methane is a conservative indicator for the 10 % LFL criteria within a low-airflow enclosure (Fig. X2.3). In both figures, the air fraction is complementary to the methane concentration; methane flux partially displaces ambient air and its components (nitrogen, oxygen, argon, and so forth). Differential pressure from the enclosure to below a capping layer is < 2 in. H_2O for lower-permeability capping layers of approximately 10^{-16} to 10^{-17} m^2 for the specified 0.15-m capping layer thickness.



NOTE 1—Sandy soil is presumed at depths greater than 0.15 m. Varied transport properties are presumed for the shallow cap layer from the surface to 0.15 m. Concentration profiles are shown for methane *(a)* and air *(b)* with the diffusion coefficient through the shallow layer equal to that for sand (1/1) and reduced by factors from 2 through 64. The concentration profiles are compared with a 30 % v/v methane criteria specified at 0.15 m and greater (below the cap) and shown to be conservative (overestimating enclosure methane concentration) with respect to the 30 % v/v methane soil gas criteria for all presumed diffusion coefficients. Differential pressure versus depth is shown in *(c)* for selected values of cap permeability ranging from that equal to sand (1E-13 m^2) to 1.0E-19 m^2. The pressure profiles are compared with a 2-in. H_2O differential pressure criteria at depths below 0.15 m and are shown to be conservative (overestimating enclosure methane concentration) for cap permeability less than approximately 1.0E-16 m^2. Values are calculated with the algebraic model of Thorstenson and Pollock (**27**) and biodegradation of methane is very conservatively neglected. Assumptions: soil (sand) permeability = 1.0E-13 m^2 and soil (sand) effective diffusion coefficient for methane in air = 3.49E-06 m^2/s.

FIG. X2.2 Soil Gas Versus Depth for *(a)* Methane, *(b)* Air, and Differential Pressure *(c)* for an Applied Surface Methane Concentration of 5.4 %v/v (100 % LFL) and an Upward Methane Flux of 3.8E-4 g-mol /m^2-s (Corresponding to a 5.4 %v/v Methane Concentration in a Low-Flow Rate Surface Enclosure)

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NOTE 1—Sandy soil is presumed at depths greater than 0.15 m. Varied transport properties are presumed for the shallow cap layer from the surface to 0.15 m. Concentration profiles are shown for methane *(a)* and air *(b)* with the diffusion coefficient through the shallow layer equal to that for sand (1/1) and reduced by factors from 2 through 64. The concentration profiles are compared with a 5% v/v methane criteria specified at 0.15 m and greater (below the cap), and shown to be conservative (overestimating enclosure methane concentration) with respect to the 5% v/v methane soil gas criteria for all presumed diffusion coefficients. Differential pressure versus depth is shown in *(c)* for selected values of cap permeability ranging from that equal to sand (1E-13 m^2) to 1.0E-19 m^2. The pressure profiles are compared with a 2-in H_2O differential pressure criteria at depths below 0.15 m and are shown to be conservative (overestimating enclosure methane concentration) for cap permeability less than approximately 1.0E-18 m^2. Values are calculated with the algebraic model of Thorstenson and Pollock (**27**) and biodegradation of methane is very conservatively neglected. Assumptions: Soil (sand) permeability = 1.0E-13 m^2. Soil (sand) effective diffusion coefficient for methane in air = 3.49E-06 m^2/s.

FIG. X2.3 Soil Gas Versus Depth for *(a)* Methane, *(b)* Air, and Differential Pressure *(c)* for an Applied Surface Methane Concentration of 0.54 %v/v (10 % LFL) and an Upward Methane Flux of 3.8E-5 g-mol /m^2-s (Corresponding to a 0.54 %v/v Methane Concentration in a Low-Flow Rate Surface Enclosure)

TABLE X2.2 Applied Parameters

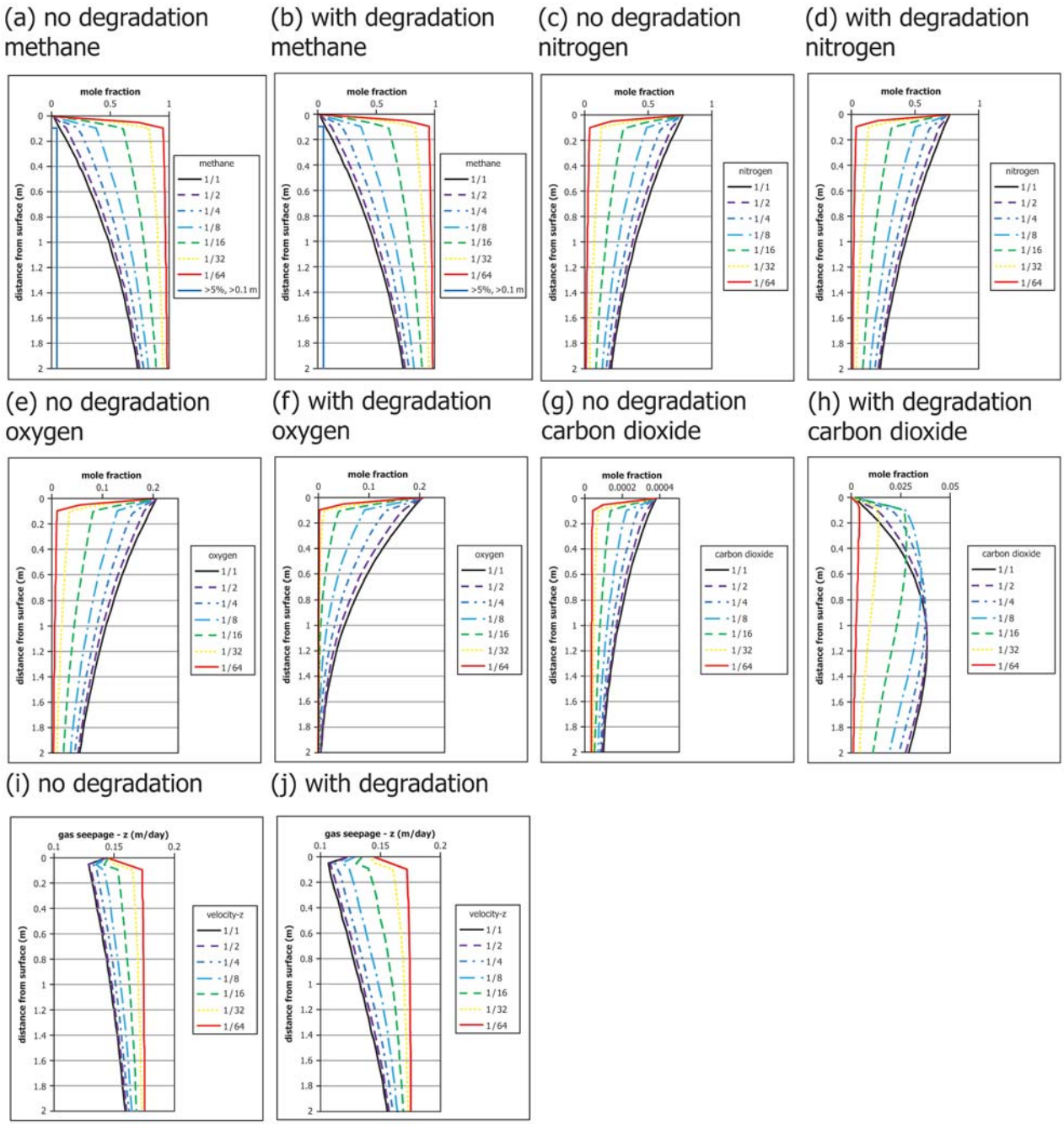
R	831.473 ((kg/m-s^2)·m^3/g-mol·K)	Ideal gas constant
P	10132500 (kg/m-s^2)	Atmospheric pressure
T	293.15 (K)	Ambient temperature
D_{CH_4}-air	2.17E-5 (m^2/s)	Molecular diffusion coefficient of methane in air
$X_{CH_4,LFL}$	0.054 (mol/mol)	Flammability criteria for methane in air
	0.10	Fractional multiplying factor for flammability criteria
MW_{CH_4}	16.04 (g/g-mol)	Molecular weight of methane
MW_{air}	28.9644 (g/g-mol)	Average molecular weight of air
μ_{CH4}	1.02E-05 (kg/m-s)	Gas viscosity of methane
μ_{air}	1.80E-05 (kg/m-s)	Gas viscosity of air
sand	–	Applied parameters for sand, after Tillman and Weaver (2007) (**28**)
θ_T	0.375 (cm^3-void/cm^3-soil)	Soil porosity
θ_w	0.054(cm^3-water/cm^3-soil)	Soil water fraction
K_w	26.78 (cm/hr)	Saturated soil hydraulic conductivity
B_k	1E-13 m^2	Gas permeability

X2.2.3 *Effect of Aerobic Methane Oxidation:*

X2.2.3.1 The dusty gas model is too complex for algebraic solution with more than two gases or with reactions between gas components. A numerical model, MIN3P-DUSTY (**29**, **30**) has been applied in solution of Case 2 (from Table X2.1), consistent with the scenarios in Fig. X2.1. Comparable simulations have been calculated both including and neglecting aerobic methane oxidation. Results are plotted in Fig. X2.4. An upward methane flux of 3.8E-4 g-mol /m^2-s was specified at a depth of 2.8 m, consistent with Case 2 (Table X2.1), based on the 10 % LFL methane criteria within an enclosure.

X2.2.3.2 As in the prior algebraic modeling, the numerical modeling shows agreement with the soil gas screening level for methane of 0.05 (5 % v/v) proposed by Eklund (**24**) in all instances. The effect of biodegradation on methane concentration and flux is relatively negligible in this case because of the high imposed methane flux. The effects of biodegradation are also limited for higher values of methane flux, including Case 1 (Table X2.1). The effect of aerobic biodegradation is more significant at lower specified values of methane flux (discussed later). Some degree of biodegradation is evident from the plotted profiles for oxygen and carbon dioxide. Net total upward gas seepage is less for higher-diffusion coefficient capping layers when biodegradation is included. This reflects greater downward oxygen transport through the higher diffusion coefficient capping layer.

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NOTE 1—Varied transport properties are presumed for the shallow cap layer from the surface to 0.10 m. Results are shown both neglecting and including biogenic methane oxidation. The difference in concentration is negligible for methane and nitrogen. Oxygen shows shallower penetration from the surface with degradation included. Significant differences are evident in the carbon dioxide concentration profile. Net upward gas seepage is less when both biodegradation and a higher-diffusion coefficient cap are included; this reflects greater downward oxygen flux as a component of the total gas flux.

FIG. X2.4 Soil Gas Versus Depth for an Applied Upward Methane Flux at a 2.8-m Depth of 3.8E-5 g-mol /m^2-s

X2.3 Modeling Considerations and Development

X2.3.1 *Homogeneous Soil Layer:*

X2.3.1.1 Significant presence of methane in soil, when observed, can occur with both displacement of relatively nonreactive atmospheric gases from soil gas (nitrogen, argon) and subsurface soil gas pressures greater than atmospheric pressure. General calculations for methane soil gas migration and attenuation under these conditions are not always adequately addressed by simple models, such as, for example, Fick's law. More complex estimates, including, for example, the "dusty gas" model (**31**, **32**) are applicable for these general scenarios and address the coupled effects of diffusion and viscous gas flow for multiple gas species in porous soil. For the purpose of developing a simple but useful screening method

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using only algebraic equations, a simplification of the "dusty gas" model is applied.

X2.3.1.2 Chemical reaction of gases in the soil matrix is neglected. For cases in which methane concentration in the soil matrix is significant, that is, greater than several percent by volume, and methane advection is significant, this is a reasonable assumption, as the methane will displace atmospheric gases, including oxygen. Where oxygen is present in the subsurface, microbial reaction of methane with oxygen can attenuate methane in the subsurface (**33**, **34**). In these conditions, this conservative assumption of neglecting biodegradation may overestimate potential methane hazard.

X2.3.1.3 Migration of methane only is considered, with other major atmospheric gases (nitrogen, oxygen, argon, and carbon dioxide) included as a single stagnant (air) component in soil gas. The method follows that of Thorstenson and Pollock (**27**), hereafter, TP. The effect of total pressure gradients and temperature gradients on diffusion rates is neglected. Gas transport is presumed to be dominated by gas-gas, not gas-solid interactions; this is a reasonable assumption at and near atmospheric pressure. Development and discussion of the method follows.

X2.3.1.4 In these estimates, a steady, constant flux, $N^T_{CH_4}$, of methane (CH_4) is specified along the migration pathway from a source at depth to the open surface interface. For the one-component nonreactive flow, mole and mass averaged velocity (or flux) is the same. Mass flux and volume (or Darcy) flux are, respectively:

$$J_{CH_4} = MW_{CH_4}\cdot N^T_{CH_4} \tag{X2.5}$$

$$u_v = (R\cdot T\ /P)\cdot N^T_{CH_4} \tag{X2.6}$$

X2.3.1.5 For a biogenic source, the flux could include both methane and carbon dioxide. For a chemical source (hydrocarbons, for example), the flux could also include volatilizing component chemicals.

X2.3.1.6 Air is presumed as a stagnant gas with no net flux into or out of the soil, $N^T_{air}=0$. The concentration of air in soil is given by the solution to the Stefan-Maxwell Equations [noting TP (Eq. 85) has a typographical error; integration of TP (Eq. A2) is shown]. The mole fraction of CH4 is given by difference [TP(Eq. 86)]:

$$X_{air}(s) = X_{air}(s\ =\ 0)\cdot\exp\left(-\left(\frac{R\cdot T}{P}\right)\cdot\left(\frac{N^T_{CH_4}}{D_{CH_4-air(eff)}}\right)\cdot s\right) \tag{X2.7}$$

$$X_{CH_4}(s) = 1 - X_{air}(s) \tag{X2.8}$$

X2.3.1.7 The value, s, is the increasing depth or distance along the migration pathway originating at the point of entry to an enclosed space ($s = 0$) as in Fig. X2.1. At the $s = 0$ boundary, $X_{CH_4}(s\ =\ 0)\leq X_{CH_4,LFL}\cdot\varepsilon$ is a limiting criterion. In upper bound calculations (representing worst case conditions), we apply:

$$X_{CH_4}(s\ =\ 0) = X_{CH_4,LFL}\cdot\varepsilon \tag{X2.9}$$

$$X_{air}(s\ =\ 0) = 1 - X_{CH_4}(s\ =\ 0) \tag{X2.10}$$

X2.3.1.8 Other parameters include the temperature, T (K), presumed constant; the total atmospheric pressure, P, here presumed nearly constant over the soil layer depth; and the ideal gas constant, R. The solution for $X_{air}(s)$ also applies for the conserved (or nearly conserved) gases in air, including nitrogen and argon. The value $D_{CH_4\text{-}air(eff)}$(**35**) is the effective diffusion coefficient of methane in the soil matrix.

$$D_{CH_4-air(eff)} = D_{CH_4-air}\cdot\left(\frac{\theta_a^{10/3}}{\theta_T^2}\right) \tag{X2.11}$$

where:

$D_{CH_4\text{-}air}$ = molecular diffusion coefficient of methane in air,
θ_T = total soil porosity, and
θ_a = air-filled soil porosity.

X2.3.1.9 In this example, $D_{CH_4\text{-}air}$ is presumed constant independent of the component mixture composition.

X2.3.1.10 Viscous flux is calculated as [TP(70)]:

$$N^V = \frac{N^T_{CH_4}\cdot(MW_{CH_4})^{1/2} + N^T_{air}\cdot(MW_{air})^{1/2}}{\frac{\mu\cdot b_m}{P} + X_{CH_4}\cdot(MW_{CH_4})^{1/2} + X_{air}\cdot(MW_{air})^{1/2}} \tag{X2.12}$$

X2.3.1.11 Molecular weight for methane and air are respectively, MW_{CH_4} and MW_{air}. Gas viscosity, μ, is defined as mean molar viscosity of the mixture [TP Eq. (81)]:

$$\mu = X_{CH_4}\cdot\mu_{CH_4} + X_{air}\cdot\mu_{air} \tag{X2.13}$$

X2.3.1.12 The Klickenberg parameter for air, b_{air}, is based on empirical correlation [TP (Eqs. 68 and 69)] of measured gas permeability in porous media.

$$b_{air}[\text{atm}] = 0.77\cdot B_k[\text{millidarcies}] \tag{X2.14}$$

where b_{air} is in atmospheres and the soil matrix permeability, B_k, is in millidarcies.

X2.3.1.13 This is a dimensional correlation; with unit change we have:

$$b_{air}[\text{kg/m}-\text{s}^2] = 10132500\frac{\text{kg/m}-\text{s}^2}{\text{atm}}\cdot 0.77\cdot\left(\frac{\text{millidarcy}}{9.869233\text{E}-16\text{m}^2/\text{millidarcy}}\right)^{-0.39}\cdot B_k[\text{m}^2]^{-0.39}$$

$$b_{air}[\text{kg/m}-\text{s}^2] = 0.11\cdot B_k[\text{m}^2]^{-0.39} \tag{X2.15}$$

X2.3.1.14 The Klickenberg parameter is generalized to a hypothetical gas of unit molecular weight and unit viscosity as [TP (Eq. 63)]:

$$b_m = b_{air}\cdot(MW_{air})^{1/2}/\mu_{air} \tag{X2.16}$$

X2.3.1.15 Differential pressure along the pathway s is calculated using Darcy's law [TP (Eq. C2)].

$$\frac{\partial P(s)}{\partial s} = -N^V\cdot\left(\frac{R\cdot T}{P}\right)\cdot\frac{\mu}{B_k} \tag{X2.17}$$

X2.3.1.16 The differential pressure over a finite soil layer thickness, s, is numerically calculated as:

$$\Delta P(s) = \int_{s=0}^{s}\left(\frac{\partial P}{\partial s}\right)\cdot ds \tag{X2.18}$$

X2.3.2 *Upper-Bound Flux and Layered Soils:*

X2.3.2.1 For homogeneous soils, as in Fig. X2.1 (a), the the profile relationship Eq X2.7 is applied.

$$N^T_{CH_4} = -\ln\left(\frac{X_{air}(s\ =\ L)}{X_{air}(s\ =\ 0}\right)\cdot\left(\frac{P}{R\cdot T}\right)\cdot\left(\frac{D_{CH_4-air(eff)}}{L}\right) \tag{X2.19}$$

X2.3.2.2 This relationship imposes an upper bound methane flux:

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$$N^T_{CH_4}(s = L) \le -\ln\left(\frac{X_{air}(s = L)}{X_{air}(s = 0)}\right)\cdot\left(\frac{P}{R\cdot T}\right)\cdot\left(\frac{D_{CH_4-air(eff)}}{L}\right) \quad \text{(X2.20)}$$

X2.3.2.3 For a given soil type with specified $D_{CH_4\text{-}air(eff)}$ and $X_{CH_4}(s = 0) \le X_{CH_4,LFL}\cdot\varepsilon$, this maximum acceptable flux is a function of depth ($s = L$) and source concentration $X_{air}(s = L)$.

X2.3.2.4 For layered soils, including capping layers, as in Fig. 1(b) and (c), each layer is defined by bulk parameters, as $D_{CH_4\text{-}air(eff)}$, effective vapor diffusion coefficient; B_k, gas permeability; and L, thickness. Eq X2.9 and Eq X2.10 apply for each of the layers. With constant flux, $N^T_{CH_4}$, through all of the layers, and matched concentrations of methane and air at the layer interfaces, flux through a two-layer system is:

$$N^T_{CH_4} = -\ln\left(\frac{X_{air}(s_2 = L_2)}{X_{air}(s_1 = 0)}\right)\cdot\left(\frac{P}{R\cdot T}\right)\frac{1}{\left(\frac{L_1}{D_{CH_4-air(eff)_1}} + \frac{L_2}{D_{CH_4-air(eff)_2}}\right)} \quad \text{(X2.21)}$$

X2.3.2.5 This defines an acceptable upper bound flux:

$$N^T_{CH_4}(s_2 = L_2) \le -\ln\left(\frac{X_{air}(s_2 = L_2)}{X_{air}(s_1 = 0)}\right)\cdot\left(\frac{P}{R\cdot T}\right)\frac{1}{\left(\frac{L_1}{D_{CH_4-air(eff)_1}} + \frac{L_2}{D_{CH_4-air(eff)_2}}\right)} \quad \text{(X2.22)}$$

as a function of depth ($s_2 = L_2$) and source concentration $X_{air}(s_2 = L_2)$.

X2.3.3 *Transport Estimates for a Cracked Capped Soil Layer:*

X2.3.3.1 Capping layers of soil, asphalt paving, or concrete may be intact or cracked. In the instance that the soil layer bounded by a cracked cap, the cracked (A_{crk}) and total (A_{total}) areas are specified. The crack fraction is defined as:

$$\eta = \left(\frac{A_{crk}}{A_{total}}\right) \quad \text{(X2.23)}$$

X2.3.3.2 For both diffusion coefficient and permeability estimates we consider an area-weighted parallel resistance flow model. The effective average parameter values are:

$$D_{eff,avg} = \eta\cdot D_{eff,crk} + (1 - \eta)\cdot D_{eff,intact} \quad \text{(X2.24)}$$

$$B_{k,avg} = \eta\cdot B_{k,crk} + (1 - \eta)\cdot B_{k,intact} \quad \text{(X2.25)}$$

X2.3.3.3 With the intact area of the cap presumed impermeable, flow occurs only through the cracked area and:

$$D_{eff,avg} = \eta\cdot D_{eff,crk} \quad \text{(X2.26)}$$

$$B_{k,avg} = \eta\cdot B_{k,crk} \quad \text{(X2.27)}$$

X2.3.3.4 Other than the redefined transport parameters, calculations are similar to those for the intact cap. For an intact concrete capping layer with no cracks ($\eta = 0$), the lower bound flux is not zero but is instead limited by diffusion through the intact concrete.

X2.3.4 *Model Sensitivity—Comparison of Stefan-Maxwell Equation to Fick's Law:*

X2.3.4.1 From Eq X2.7 and Eq X2.8, with no degradation, for a binary mixture (methane/air) in homogeneous soil, we have the mole fraction of methane in soil gas:

$$X_{CH_4}(s) = 1 - \left(1 - X_{CH_4}(s = 0)\right)\cdot\exp\left(-\left(\frac{R\cdot T}{P}\right)\cdot\left(\frac{N^T_{CH_4}}{D_{CH_4-air(eff)}}\right)\cdot s\right) \quad \text{(X2.28)}$$

X2.3.4.2 The Darcy flux of methane is:

$$u_v = \left(\frac{R\cdot T}{P}\right)\cdot N^T_{CH_4} \quad \text{(X2.29)}$$

X2.3.4.3 A Taylor series expansion of exp(η) at η = 0 is:

$$\exp(\eta) = \sum_{n=0}^{\infty}\frac{\eta^n}{n!} \cong 1 + \eta + \frac{\eta^2}{2} + \ldots \quad \text{(X2.30)}$$

X2.3.4.4 Apply the first two terms of the Taylor series expansion to Eq X2.7 and Eq X2.8.

$$X_{CH_4}(s) \approx 1 - \left(1 - X_{CH_4}(s = 0)\right)\cdot\left\{1 + \left(-\left(\frac{R\cdot T}{P}\right)\cdot\left(\frac{N^T_{CH_4}}{D_{CH_4-air(eff)}}\right)\cdot s\right)\right\} \quad \text{(X2.31)}$$

X2.3.4.5 With algebra, this yields:

$$N^T_{CH_4} \approx \left(\frac{P}{R\cdot T}\right)\cdot\frac{D_{CH_4-air(eff)}}{s}\cdot\frac{\left[X_{CH_4}(s) - X_{CH_4}(s = 0)\right]}{\left[1 - X_{CH_4}(s = 0)\right]} \quad \text{(X2.32)}$$

X2.3.4.6 The further simplification in Fick's law presumes low concentrations as a fraction of the total:

$$\left[1 - X_{CH_4}(s = 0)\right] = X_{air}(s = 0) = X_{total} = 1 \quad \text{(X2.33)}$$

or

$$N^T_{CH_4} \approx \left(\frac{P}{R\cdot T}\right)\cdot\frac{D_{CH_4-air(eff)}}{s}\cdot\left[X_{CH_4}(s) - X_{CH_4}(s = 0)\right] \quad \text{(X2.34)}$$

X2.3.4.7 The Darcy flux for Fick's law and Stefan-Maxwell equations are:

$$u_{v[D-G]} = \left(\frac{R\cdot T}{P}\right)\cdot N^T_{CH_4} = -\frac{D_{CH_4-air(eff)}}{s}\cdot\ln\left(\frac{1 - X_{CH_4}(s)}{1 - X_{CH_4}(s = 0)}\right) \quad \text{(X2.35)}$$

$$u_{v[Ficks]} = \left(\frac{R\cdot T}{P}\right)\cdot N^T_{CH_4} \approx \frac{D_{CH_4-air(eff)}}{s}\cdot\ln\left(X_{CH_4}(s) - X_{CH_4}(s = 0)\right) \quad \text{(X2.36)}$$

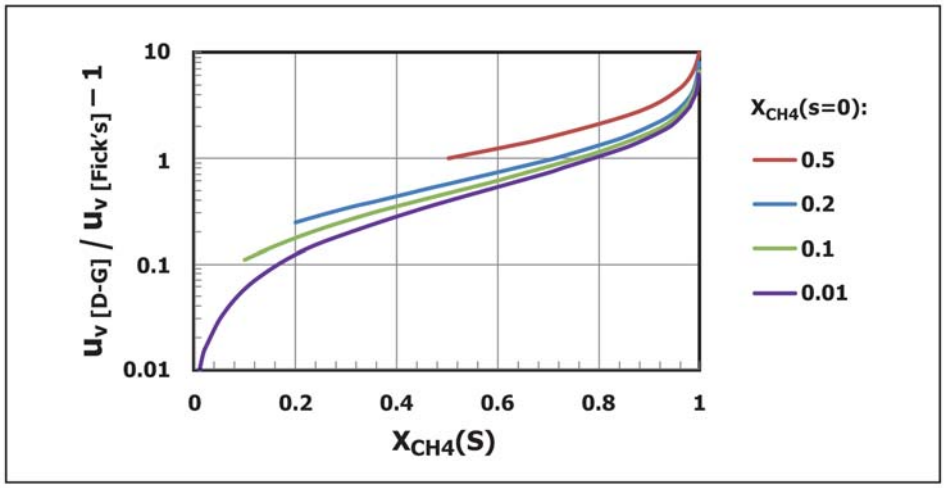
X2.3.4.8 The ratio is:

$$\frac{u_{v[D-G]}}{u_{v[Ficks]}} = \frac{-\ln\left(\frac{1 - X_{CH_4}(s)}{1 - X_{CH_4}(s = 0)}\right)}{\left(X_{CH_4}(s) - X_{CH_4}(s = 0)\right)} \quad \text{(X2.37)}$$

X2.3.4.9 A comparison of bias is shown in Fig. X2.5 for ratios of $\left[X_{CH_4}(s = 0)/X_{CH_4}(s = L)\right]$ = 0.01, 0.1, 0.2, and 0.5 and $X_{CH_4}(s = L) > X_{CH_4}(s = 0)$, that is, upward diffusive concentration flux.

X2.3.4.10 It is evident from Fig. X2.5 that, for lower concentrations of the mobile methane gas, the bias between the two estimates is smaller. For methane mole fraction concentrations less than 0.20 bias, error is less than approximately 25 %. More general problems, including reactive flow and heterogeneous conditions, would have different bias than this simple example. The solution does point to the likely need to use more complex models than Fick's law when the mobile gas is a substantial fraction of the total soil gas composition.

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NOTE 1—For values of $\{u_{v[D-G]} / u_{v[Ficks]} - 1\} < 0.5$, bias error is less than 50 %.

FIG. X2.5 Relative Bias between Fick's Law and Stefan-Maxwell Flux Estimates Versus Source Concentration, $X_{CH4}(s)$ and Concentration at the Top of the Domain $X_{CH4}(s = 0)$

X2.4 Effect of Methane Biodegradation

X2.4.1 The prior section presented estimates for vapor transport of methane in air (a binary mixture) in subsurface soils using a simplified algebraic solution of the "dusty-gas" model. Scenarios with more than two chemical components or with biological reactions between components are more complex and require numerical solution. The contribution of biological methane oxidation has been estimated using the MIN3P-DUSTY numerical model to simulate transport and reaction of methane and oxygen in air through soils. MIN3P-DUSTY is a three-dimensional finite-volume model for multicomponent reactive transport in variably saturated porous media (**29**, **30**). Gas and vapor transport in this use of the MIN3P-DUSTY model are simulated using the dusty gas model. Gas flow and induced pressures in these simulations result from molecular diffusion and non-equimolar reactions of the gas species.

X2.4.2 The capped and uncapped one-dimensional scenarios illustrated in Fig. X2.1 are used in the simulations. Stoichiometric methane oxidation (when included) occurs in the water phase.

$$CH_4 + 2 \cdot O_2 \rightarrow CO_2 + 2 \cdot H_2O \quad \text{(X2.38)}$$

X2.4.3 No biomass growth is presumed. Dual Monod-type kinetics are applied.

$$R_m = V_{\max} \cdot \left(\frac{c_{CH_4}}{c_{CH_4} + K_{m,CH_4}} \right) \cdot \left(\frac{c_{O_2}}{c_{O_2} + K_{m,O_2}} \right) \quad \text{(X2.39)}$$

X2.4.4 Kinetic rates are based on observation and literature values (**35**). Values include the maximum methane oxidation rate, V_{max} (8×10^{-8} mol-CH_4/L_{water}-s) and the half-saturation constants for methane and oxygen, respectively, $K_{m\_O_2}$ and K_{m,O_2} (both 1×10^{-5} mol/L_{water}).

X2.4.5 Results are shown in Fig. X2.4 for a high-methane flux scenario. In Fig. X2.4, aerobic biodegradation of methane has a relatively insignificant effect on methane flux at the surface.

X3. LEGAL BACKGROUND ON FEDERAL AND STATE LIABILITY FOR METHANE GAS

INTRODUCTION

This appendix provides background on the basis of potential liability for owners and operators of real property for methane gas Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. 9601 et seq. (CERCLA), Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq. ("RCRA"), and potential state common law causes of action for personal injury and property damage claims as a result of the presence of methane gas. These potential state common law causes of action include negligence, strict liability in tort, nuisance, trespass, and premises liability.

NOTE X3.1—This appendix is intended for informational purposes only and is not intended to be nor may it be interpreted as legal advice.

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X3.1 CERCLA

X3.1.1 CERCLA authorizes the federal government to respond to releases of hazardous substances,[13] seek reimbursement from potentially responsible parties (PRPs),[14] or order PRPs to abate releases or threatened releases of hazardous substances that may be an imminent and substantial endangerment to the public health or welfare or the environment.[15] In addition, CERCLA requires anyone who is in charge of a facility or vessel to report immediately releases of hazardous substances that they become aware of which exceed the reportable quantity threshold established by the U.S. Environmental Protection Agency (EPA).[16] In addition, private persons and PRPs who incur cleanup costs may seek reimbursement from other PRPs provided they comply with certain requirements.[17]

X3.1.2 There are four categories of potentially responsible parties that may be liable under CERCLA identified in §9607(a).[18] A plaintiff shall establish the following elements before a defendant may be found liable under CERCLA:

X3.1.2.1 There has been a "release" or threatened release;[19]

X3.1.2.2 of a hazardous substance;[20]

X3.1.2.3 from a facility or vessel;[21] and

X3.1.2.4 that has caused the incurrence of response costs[22] that are consistent with the National Oil and Hazardous Substances Pollution National Contingency Plan (NCP).[23]

X3.1.3 Methane does not fall within the definition of a CERCLA hazardous substance because it does not fall within Categories (A)-(F) of the definition of a hazardous substance.[24] For example, the EPA has not designated methane has a hazardous substance under 42 U.S.C. 9602.[25] Methane is also not regulated as a hazardous waste under 42 U.S.C. 6921.[26] Methane has not been identified as a toxic pollutant[27] or a hazardous air pollutant.[28] Finally, methane has not been identified as an "imminently hazardous chemical substance or mixture pursuant to 15 U.S.C. 2606.[29] Indeed, the recent regulatory focus involving methane has been its status as an intensive greenhouse gas.

X3.1.3.1 The definition of hazardous substance in Section 101(14) and pollutant or contaminant in Section 104(a)(2) excludes certain types of natural gas and petroleum. Naturally occurring methane gas found in or associated with petroleum deposits is a type of natural gas and is, therefore, exempted from CERCLA coverage. However, methane gas emanating from a landfill is not considered to be "natural gas" and such releases may, therefore, be eligible for response under Section 104(a)(1) if methane gas otherwise meets the definition of pollutant or contaminant under Section 104(a)(2).

X3.1.3.2 The EPA is authorized under Section 104(a)(1) to take response actions for actual or potential releases of "pollutants or contaminants" that may present an "imminent and substantial danger to the public health or welfare." In its guidance document entitled, "CERCLA Removal Actions at Methane Release Sites," OSWER Directive #9360.0-8 (Jan. 23, 1986), the EPA indicated that potentially explosive gas levels that are detected during daily monitoring at the perimeter of the landfill and nearby homes and businesses appeared to meet the criterion of imminent and substantial danger. However, the EPA emphasized that, while it had the authority to take action under Section 104, the agency would not be able to recover its costs under Section 107 since methane is not a hazardous substance.

X3.1.4 If landfill gas contains methane and other hazardous substances such as volatile organic compounds (VOCs), the landfill gas itself could be considered to be a hazardous substance.[30]

X3.2 Resource Conservation and Recovery Act (RCRA)[31]

X3.2.1 Under Subtitle D of RCRA, the EPA established minimum national performance standards for landfills receiving wastes such as municipal wastes that are not regulated as hazardous wastes.[32] Subtitle D imposes certain requirements regarding methane gas. For example, for operating landfills, the concentration of methane gas may not exceed 25 % of the lower explosive limit (LEL) for methane in facility structures. Additionally, the concentration of methane gas may not exceed

[13] Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9604(a)(1) (2006).

[14] 42 U.S.C. § 9607(a)(4)(A).

[15] 42 U.S.C. § 9606.

[16] 42 U.S.C. § 9603.

[17] 42 U.S.C. § 9607(a)(4)(B).

[18] 42 U.S.C. § 9607(a)(1)-(4).

[19] 42 U.S.C. § 9601(22). Excluded from the definition of "release" is any release that results in exposure solely within the workplace for claims that may be asserted against an employer; 42 U.S.C. § 9601(22)(A).

[20] 42 U.S.C. §§ 9601(14)(A)-(F). A CERCLA hazardous substance includes any substance identified as a CERCLA hazardous substance by EPA pursuant to 42 U.S.C. § 9602 (See List of Hazardous Substances and Reportable Quantities, 40 C.F.R. pt. 302, Table 302), classified as a hazardous waste under 42. U.S.C. § 6921, designated as toxic pollutants under 33 U.S.C. §§ 1317 or 1321, a hazardous air pollutant under 42 U.S.C. § 7412, or an imminently hazardous chemical substance or mixture pursuant to 15 U.S.C. § 2606(f).

[21] 42 U.S.C. § 9601(9).

[22] 42 U.S.C. § 9601(25).

[23] 40 C.F.R. pt. 300.

[24] 42 U.S.C. 9601(14)(A)-(F).

[25] 42 U.S.C. 9601(14(B). See also OSWER Directive 9360.0-8, "CERCLA Removal Actions at Methane Release Sites," Henry L. Longest II to Basil Constantelos (Jan. 23, 1986).

[26] 42 U.S.C. 9601(14)(C). Indeed, the EPA has decided to regulate methane gas from landfills under the nonhazardous waste section of the Resource Conservation and Recovery Act (RCRA). See 40 CFR 258.23.

[27] 42 U.S.C. 9601(14)(D).

[28] 42 U.S.C. 9601(14)(E). Methane is not one of the 187 substances identified as hazardous air pollutants as required by this clause to be considered a CERCLA hazardous substance. Indeed, the EPA decided to address methane gas emissions under its New Source Performance Standards of Section 111 of the Clean Air Act. See 40 CFR 60.30. Methane is considered a "regulated substance" under the Chemical Accident Prevention Provisions of 42 U.S.C. 7412(r) that requires facilities producing, handling, processing, distributing, or storing certain chemicals above their listed threshold quantities to develop a risk management program and prepare a risk management plan (RMP). See Table 3 of 40 CFR 68.130. A "regulated substance" is not a hazardous air pollutant for purposes of 42 U.S.C. 9601(14)(E).

[29] 42 U.S.C. 9601(14)(F).

[30] *Marcas, LLC v Board of County Commissioners of St. Mary's County*, 2011 U.S. Dist. LEXIS 110378 (D. Md. 9/28/11)(migration of methane gas, vinyl chloride and other volatile organic compounds to residential development project).

[31] 42 U.S.C. 6901 et seq.

[32] 42 U.S.C. 6941-6949a. The subtitle D regulations are codified at 40 C.F.R. Part 258.

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the LEL for methane at the property boundary.[33] The presence of methane gas at a boundary of a landfill above the LEL has been held to be a violation of the Subtitle D regulations 40 C.F.R. § 258.23(a)(2).[34]

X3.2.2 *RCRA Citizen Suits for Injunctive Relief:*

X3.2.2.1 RCRA Section 7002 provides that injunctive relief may be available against any person who: (1) is alleged to be in violation of any permit, standard, regulation, condition, requirement, prohibition, or order under RCRA[35] or (2) has contributed or is contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste that may present an imminent and substantial endangerment to health or the environment.[36]

X3.2.2.2 Unlike CERCLA, which only requires a showing that a release of hazardous substances has occurred, Section 7002 requires the plaintiff to show also that the presence of solid or hazardous wastes may be posing an imminent and substantial endangerment.[37] In general, to establish that the harm is "imminent," a plaintiff does not have to show actual harm, just that there is a threatened risk that may occur later.[38] Likewise, to establish that the harm posed a "substantial endangerment," a plaintiff simply needs to show that there is "reasonable cause for concern that someone or something may be exposed to a risk of harm if remedial action is not taken."[39] The finding of an imminent and substantial endangerment is a fact-intensive inquiry that will depend on specific site conditions. The migration of methane gas from a landfill at concentrations that exceed the LEL has been found to present an imminent and substantial endangerment to health or the environment.[40]

X3.3 State and Local Regulation of Methane

X3.3.1 Most states have corollary statutes to CERCLA[41] or RCRA.[42] Other, more detailed, statutes or regulations address methane specifically by source. For example, methane from landfills is highly regulated at the state level.[43] Methane arising from oil production facilities is also specifically regulated.[44]

X3.3.1.1 Some special situations concerning the specific future uses of property may give rise to regulation of methane. For example, California's Education Code defines methane as a naturally occurring hazardous material requiring investigation and remediation at school sites.[45]

X3.3.2 *Local Regulation:*

X3.3.2.1 A myriad of local city and county regulations also address methane, especially with respect to residential development. The City of Los Angeles, which not, coincidentally, holds many producing oil wells, has a comprehensive set of "Methane Seepage Regulations," for example.[46] Variations of these regulations may be found throughout the state (country).[47]

X3.3.2.2 Local agencies do not uniformly regulate methane gas in soil vapor, however, since local conditions may vary. For example, the County of San Diego, California first adopted an ordinance regulating methane gas testing and mitigation following discovery of methane in a real estate development.[48] It later repealed the ordinance after several years of testing at numerous real estate developments established that subsurface methane gas, which is not under pressure and is associated with small amounts of organic materials in engineered fills, have much lower risks than methane associated with landfills and oil wells.[49]

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[33] 40 C.F.R. § 258.23(a)(1) and (2).

[34] *Marcas, L.L.C. v. Bd. of County Comm'rs*, 2013 U.S. Dist. LEXIS 104380 (D.Md. 7/25/13).

[35] 42 U.S.C. § 6972(a)(1)(A). See *Cox v. City of Dallas*, 1999 U.S. Dist. LEXIS 22747 (N.D. Tx. 8/12/99) (Defendant ordered to monitor for methane gas and take appropriate action to protect the health and safety of the residents of the adjoining area if hazardous conditions are detected.)

[36] 42 U.S.C. § 6972(a)(1)(B).

[37] *Foster v. U.S.*, 922 F.Supp. 642 (D.D.C. 1996).

[38] *Dague v. City of Burlington*, 935 F.2d 1343, 1355-1356 (2d Cir.1991), reversed on other grounds, 505 U.S. 557, 112 S.Ct. 2638, 120 L.Ed.2d 449 (1992); Price v. United States Navy, 39 F.3d l0ll, 1019 (9th Cir.1994).

[39] *Foster v. U.S.* 922 F.Supp. 642 (D.D.C. 1996); *United States v. Conservation Chemical Co*., 619 F.Supp. 162, 193 (W.D.Mo.1985).

[40] *Marcas, L.L.C. v. Bd. of County Comm'rs*, 2013 U.S. Dist. LEXIS 104380 (D.Md. 7/25/13). See also *Newark Group, Inc. v. Dopaco, Inc*., 2011 U.S. Dist. LEXIS 110110 (E.D. Cal., 2011) (high concentrations of methane from degradation of toluene present "a threatened or potential harm" to Marcor employees on the property and that there is "some reasonable cause for concern that [Marcor employees] may be exposed to a risk of harm by a . . . threatened release of [methane] if remedial action is not taken)", *Frontier Recovery, LLC v. Lane County*, 2010 U.S. Dist. LEXIS 61857 (D. Or., Apr. 14, 2010) (denying defendant motion for summary judgment). But, see *Adams v. NVR Homes, Inc*., 135 F. Supp. 2d 675 (D.Md. 2001) (methane concentrations at residential development did not constitute imminent and substantial endangerment).

[41] See for example, California "Hazardous Substance Account Act," Cal. Health & Safety Code Section 25300 et seq.; New Jersey "Spill Compensation and Control Act" N.J. Rev. Stat., Sections 58:10-23.11 et seq.

[42] See for example, California "Hazardous Waste Control Law," Cal. Health & Safety Code Sections 25200 et seq.

[43] See for example, California Code of Regulations, Title 27, Division 2, Subdivision 1, Chapt. 3.0, Subchapter 4, Article 6, "Gas Monitoring and Control at Active and Closed Disposal Sites," (California Integrated Waste Management Board).

[44] See California Code of Regulations Title 14, Chap. 4, Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR).

[45] California Education Code, Section 17210.1.

[46] Los Angeles Municipal Code, Division 71, of Article 1, Chap. IX, Sections 91.7101 et seq.

[47] "Development and Land Use Guideline for Combustible Soil Gas Hazard Mitigation," Guideline L-03, Orange County Fire Authority, Jan. 31, 2000 (www.ocfa.org/business/pandd/guideline.htm); City of Huntington Beach, California Building Code Section 17.04.085, July 1999.

[48] San Diego County Code, Div. 6, Title 8, Chap. 3, Sections 86.301 et seq., added by Ordinance No. 9364 (July 2001) amended by Ordinance No. 9446 (Mar. 2002).

[49] San Diego County Ordinance No. 9713 (20 April 2005).

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X3.4 State Common Law Liability

X3.4.1 Although environmental law is often considered primarily based on statutes and regulations, the common law (namely, court-made law) has been used for centuries to fashion remedies long before any applicable statutes were enacted.[50] These theories include nuisance, trespass, negligence, and strict liability.

X3.4.1.1 *Nuisance:*

(1) The cause of action of nuisance has been used as a theory of recovery for damages caused by environmental pollution for more than a century.[51]

(2) In some jurisdictions, a claim for private nuisance requires that the source of the contaminant (for example, methane) be from a neighboring property.[52] In others, it is a valid theory even if the source is on the very property damaged.[53]

(3) Methane migration gives rise to a claim of private nuisance if permanent damages include reduction in value of the property and emotional distress.[54] Where explosive levels of methane from a former town dump forced homeowners to abandon their home, they were awarded the full value of their home under a theory of inverse condemnation, in addition to nuisance.[55]

[50] For a summary of common law causes of action applicable to environmental pollution generally, see James Witkin, "Environmental Aspects of Real Estate and Commercial Transactions," 3d edition, ABA Books, 2004, Chap. 4.

[51] See for example, *Donahue v. Stockton Gas Co*., 6 Cal.App. 276 (1907) (gasoline leaking onto adjacent land and polluting well constitutes nuisance).

[52] See for example, *Philadelphia Electric Co. v. Hercules, Inc*., 762 F.2d 303 (3rd Cir. 1985).

[53] See *Mangini v. Aerojet-General Corp*., 230 Cal. App. 3d 1125, 281 Cal.Rptr 827 (1991), Cf. *Mangini v. Aerojet-General Corp*., 12 Cal. 4th 1087 (1996) (nuisance not abatable, but "permanent," therefore, barred by statute of limitations).

[54] *City of Warner Robbins v. Holt*, 220 Ga.App. 794 (1996).

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Appendix H

MTN 2 COAST LLC

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August 20, 2020

Joel Hecker, LP, PG
Pioneer Technologies
5205 Corporate Ctr. Ct. SE, Ste A
Olympia, WA 98503

Re: Sunset Auburn – Monitoring Well Information

Dear Joel,

Mtn2Coast, LLC is transmitting the following to you:

Coordinates for monitoring wells in form (pt#, northing, easting, elevation, description)

- 211,126265.6570,1295942.3270,53.9000,MMW 1
- 102,125763.3020,1295554.6070,53.9010,MMW 2
- 103,125870.3310,1295931.5420,54.3270,MMW 3
- 104,125920.0120,1295929.8660,54.1940,MMW 4e
- 105,125769.5190,1295879.4280,53.7900,MMW 5
- 106,125894.9318,1295858.8810,55.4110,MMW 6
- 107,125786.6220,1295956.7690,53.8760,MMW 7
- 108,125933.3340,1295984.5810,54.0770,MMW 8
- 109,125870.1480,1295985.3300,54.2500,MMW 9
- 110,125743.4580,1295974.5280,53.8810,MMW 10
- 111,125746.3890,1295852.7290,54.1760,MMW 11
- 113,125970.4960,1295838.6390,54.8090,MMW 13e

Datum is Washington State Plane Coordinates, North Zone, NAD 83/2011 and NAVD 88

Please feel free to contact us if you have any questions.

8/20/20



Best regards,
MTN2COAST, LLC

Blair E. Prigge, PLS
President

Appendix I

Table I-1: RIWP Deviations

Month(s)	RIWP Section(s)	Deviation
July 2020	3.6.2	Borings B30 through B45 and MW8 through MW11 were advanced to a set depth rather than "approximately five feet beyond first encountered GW, or 20 feet bgs, whichever is shallower" as indicated in the RIWP. All of these borings were advanced to 15 feet bgs, except B31, B36, B38, and B40 were advanced to 10 feet bgs and MW8 was advanced to 20 feet bgs.
	3.1, 3.6.3, Figures 4 and 5, Table 1	Temporary MWs were not installed and GW samples were not collected at B31, 36, 38, or 40 since these borings were within approximately 20 feet of other temporary MWs and it was deemed unnecessary to collect GW samples at each location.
	3.1, 3.6.4, Figures 4 and 5, Table 1	MW12 was not installed as planned because no significant confining layer was identified in the first 40 feet of drilling, soil was getting coarser with depth, and the licensed geologist overseeing the drilling concluded that the geologic conditions and the available drilling equipment were not suitable for installing a bentonite and concrete seal that would prevent the creation of a vertical preferential pathway.
	3.1., 3.6.4, Table 1	Groundwater samples were not collected from MW12 because MW12 was not installed.
	3.6.7.1, Figures 4 and 5, Table 1	SG3 was placed in an offset location to collect sub-slab soil gas concentrations near IA3 (rather than collocated with IA3). The offset was necessary due to an elevated floor surface in the northern portion of the 3317 building where the IA3 sample was collected.
	3.1, 3.6.8, Figures 4 and 5, Table 1	A surface water sample was not collected from the stormwater detention basin as planned because water was not present in the detention basin.
	3.1, 3.6.8, Figures 4 and 5, Table 1	A sediment sample was collected from the northeastern portion of the stormwater detection basin next to an outfall rather than "near the southwestern corner of the Site" as indicated in the RIWP.
	4.2	A VOC trip blank was inadvertently not included in the cooler shipped to the laboratory containing groundwater samples collected from MWs on 7/21/20 and 7/22/20.
	Figure 3	The location of MW13E on Figure 3 was incorrect.
	Table 1	A groundwater sample was collected from MW13E (the RIWP did not include groundwater sampling for MW13E).
	Table 1	The B33 groundwater sample was not analyzed for TPH-D and TPH-HO as planned because the associated sample bottle broke during transit to the laboratory.
	Table 1	Metals analyses were not performed for the B34 groundwater sample because not enough water could be produced from the temporary MW at B34 to fill a sample container for metals.
	Table 1	The B34 soil sample was not analyzed for metals due to a chain-of-custody error (i.e. the metals analysis for the B34 soil sample was inadvertently crossed out on the chain-of-custody rather than the intended B34 groundwater sample).
	Table 3	Due to a Federal Express shipping error, a cooler containing soil and groundwater sample containers arrived at the laboratory several days late and the temperature in the cooler exceeded the threshold of 6 degrees Celsius. The samples in this cooler were analyzed and the applicable results were J-flagged as discussed in the data quality review.
July - August 2020	3.6.6	Two additional static water level (SWL) gauging events were conducted on July 21-22, 2020 and August 19, 2020. The August 31, 2020 SWL gauging event obtained SWL measurements to the nearest 0.01 feet and obtained LNAPL thickness measurements in accordance with procedures in the RIWP. The July 21-22, 2020 and August 19, 2020 events were additional SWL gauging events because LNAPL thickness measurements were not obtained on July 21-22, 2020 or August 19, 2020. In addition, the July 21-22, 2020 event measured SWL depths to the nearest 0.05 feet (rather than 0.01 feet).
September 2020	Not applicable	Although not contemplated in the RIWP, soil gas, indoor air, and ambient air methane concentration measurements were obtained within and surrounding the 3317 Auburn Way North automobile showroom during a September 2020 real-time investigation (in response to elevated methane concentrations in a soil gas sample and an ambient air sample collected in July 2020 for VI evaluation purposes).
December 2020	Table 2	The data quality review of July 2020 investigations results was conducted by PIONEER rather than QA/QC Solutions due to QA/QC Solutions' lack of availability to conduct the work.
May 2021	Not applicable	Although not contemplated in the RIWP, the excavation and sampling of five test pits was conducted to determine the presence or absence of five suspected USTs at 3317 Auburn Way North.