

APPENDIX A
GROUNDWATER SAMPLING FIELD SHEETS

Viacom (Buffalo Airport)
Semi-Annual GW Sampling

November 24, 2014

Project # 18036-2014
Field File

**FIELD DATA RECORD FORM
METER, TURBIDITY (PORTABLE) HACH 2100P**

(QSF-421D)

Control No.: NFO 5040
 Date: 11/24/14
 User: SG/DJT

Project No.: 18036-1321
 Project Name: VIACOM SEMI ANNUAL GW SAMPLING
 Location: _____

Additional Equipment Control Numbers and Descriptions: RUFFALO AIRPORT
200NTU LOT# AA253 EXP. DEC 15', 100NTU LOT# AA252 EXP. DEC 15', 800NTU LOT# AA247 EXP DEC 15'

FIELD PROCEDURE BEFORE USE:

Do Not Calibrate in the Field - In-House Calibration Only by Field Equipment Manager

Check when completed

Check kit contents;

- Meter
- Low 0-10, medium 0-100, high 0-1000 standards
- Extra AA batteries
- Sample vials



Test and record Gelex standards:



	<u>Gelex Standard</u>	<u>Meter Reading</u>
• Low 0-10 <u>20</u>	<u>20</u>	<u>21.9</u>
• Medium 0-100	<u>100</u>	<u>102</u>
• High 0-1000	<u>800</u>	<u>813</u>

Note: Condensation on outside of sample bottles affects meter readings.

Filing: Field File

Signature:

**FIELD DATA RECORD FORM
METER, TURBIDITY (PORTABLE) HACH 2100P**

(QSF-421D)

Control No.: 6SH 010192
 Date: 11/24/14
 User: DJT/SB

Project No.: 18036-1321
 Project Name: VIACOM SEMI ANNUAL GLW
SAMPLES
 Location: _____

Additional Equipment Control Numbers and Descriptions: BUFFALO AIRPORT
2000TU LOT# AA253 EXP. DEC 15, 1000TU LOT# AA252 EXP. DEC 15, 8000TU LOT# AA247 EXP. DEC 15'

FIELD PROCEDURE BEFORE USE:

Do Not Calibrate in the Field - In-House Calibration Only by Field Equipment Manager

Check when completed

Check kit contents;

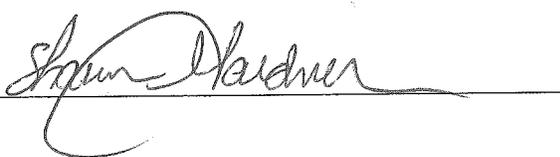
- Meter
- Low 0-10, medium 0-100, high 0-1000 standards
- Extra AA batteries
- Sample vials

Test and record Gelex standards:

	<u>Gelex Standard</u>	<u>Meter Reading</u>
• Low 0-10 ²⁰	<u>20</u>	<u>21.3</u>
• Medium 0-100	<u>100</u>	<u>100</u>
• High 0-1000	<u>800</u>	<u>788</u>

Note: Condensation on outside of sample bottles affects meter readings.

Filing: Field File

Signature: 

Date: 11/24/14

Reference No. 18036-2014

GROUNDWATER SAMPLING EQUIPMENT AND SUPPLY CHECKLIST

EQUIPMENT

- Required Sampling Equipment
(as per Work Plan or QAPP)

INSTRUMENTS

- Water level indicator
- Thermometer *
- pH meter *
- Conductivity probe *
- Turbidity meter
- HNu/OVA/Microtip
- Air Monitoring Equipment
- Horiba U-22 multi parameter

SUPPLIES

- Gasoline can/gas
- Polypropylene rope
- Aluminum foil
- Paper towels
- pH buffer solution(s)
- Conductivity standard solution(s)
- Decontamination Fluids
(As per Work Plan and QAPP)
- Sample jars (extra)
- Sample jar labels (CRA) materials
- Cooler(s)/ice packs/packing materials
- Trash bags
- Sample preservatives
- Plastic spray bottles
- Plastic basin or pan
- Sample filter (On line or External Filter)
- Polyethylene sheeting
- First Aid Kit
- Personal Protective Equipment (as per HASP)

DOCUMENTATION

- Chain of Custody Forms
- Well logs
- Notebook/Field book
- Photolog
- Site pass/badge
- Federal Express manifests
- Previous well logs/previous historical well data
- Site map
- Blank well data forms

MISCELLANEOUS

- Well Cap Keys
- Bolt cutters
- Camera/film
- Knife
- Spare batteries for instruments
- Lock Deicer (winter)
- Reinforced packing tape
- Pen/pencil/indelible marking pen
- Tool box
- Spare locks/keys
- On Site Transportation (all Terrain Vehicle/Snowmobiles)

Completed by: Dave J. Green

Date: 11/24/14

CRA

FIELD DATA RECORD FORM
METER, WATER LEVEL

(QSF-251D)

Control No.: NF06118/NF07581
Date: 11/24/14
User: S. Gardner / D. TyranProject No.: 18036-2014
Project Name: Viacom (Airport)
Location: Buffalo AirportAdditional Equipment Control Numbers and Descriptions:

FIELD PROCEDURE BEFORE USE:

Check when completed

- Check for broken or missing parts.
- Check battery
- Check operation of buzzer.
- Check operation of signal light.
- Test probe in water to ensure unit operates, both visually and audibly.
- Check cable.

Filing: Field File

Signature: _____

Date: 11/25/14

Reference No.: 18036-2014

PROJECT PLANNING COMPLETION AND FOLLOW-UP CHECKLIST

PRIOR PLANNING AND COORDINATION:

- Confirm well numbers, location and accessibility
- Review of project documents, Health and Safety Plan (HASP), sampling Quality Assurance/Quality Control (QA/QC) and site-specific sampling requirements
- Historical well data; depth, pH, performance and disposition of purge water
- Site access notification and coordination
- Coordination with laboratory through CRA Chemistry Group
- Procurement, inventory and inspection of all equipment and supplies
- Prior equipment preparation, calibration or maintenance
- NA* All utilities located and approved

FIELD PROCEDURE:

- Instruments calibrated daily
- Sampling equipment decontaminated in accordance with the QAPP
- Field measurements and sampling details logged in appropriate field books or an appropriate field form
- Well volume calculated and specified volumes removed
- Specified samples, and QA/QC samples taken per Quality Assurance Project Plan (QAPP)
- Samples properly labeled, preserved and packed
- Sampling locations secured or completed according to Work Plan
- Sample date times, locations and sample numbers have all been recorded in applicable log(s)
- Samples have been properly stored if not shipped/ delivered to lab same day
- Samples were shipped with complete and accurate Chain of Custody Record

FOLLOW-UP ACTIVITIES:

- Questionable measurements field verified
- Confirm all samples collected
- All equipment has been maintained and returned
- Sampling information reduced and required sample keys and field data distributed
- Chain of Custody Records filed
- Expendable stock supplies replaced
- CRA and client-controlled items returned (i.e., keys)
- Arrange disposal of investigation generated wastes with client
- Confirm all samples collected

Completed by: *Dave J. Tye*

Date: 11/25/14

CRA

DAILY LOG

11/24/14 HORIBA U-22 # NFO4388 CALABRATION USING CAL 9053 EXP. 4/15

PH 4.00 AUTO CAL

PH 4.00	BEFORE	4.21	AFTER	3.98
COND 4.49	BEFORE	4.33	AFTER	4.50
TURB 0.0	BEFORE	0.0	AFTER	0.3
DO	BEFORE	8.82	AFTER	9.00

HORIBA U-22 # NFO4388 CALABRATION USING SAME CAL SOL AS ABOVE

PH 4.00	BEFORE	4.34	AFTER	3.98
COND 4.49	BEFORE	4.44	AFTER	4.49
TURB 0.0	BEFORE	8.1	AFTER	0.3
DO	BEFORE	8.51	AFTER	8.96

0830 ON SITE DJT/SG WEATHER - CLOUDY W/ SOME SUN W/F WINDS SW 30-35MPH

GET AIRPORT ESCORT TO CROSS OVER TARMAC

0847 SET UP ON MW-34, MW-34D (END OF RUNWAY) PURGE + SAMPLE
 METHOD - PURGE + SAMPLE USING MASTERFLEX PERISTALTIC PUMP + DEDICATED
 TUBING TO WELL

0946 SET UP ON MW-35 PURGE + SAMPLE also purge & sample MW-30

1055 SET UP ON MW-2 PURGE + SAMPLE 33' & 32'

1222 SET UP ON MW-28 PURGE + SAMPLE

1325 SET UP ON MW-5 PURGE + SAMPLE

1420 SET UP ON MW-31 PURGE + SAMPLE BLOCK OF 2 LANES

W/ TRAFFIC CONES

1528 OFF SITE

2014
 18036 - 1321 (S)

Dane J. Tye

Sample ID WG-18036-112414-SG-001

Time 1000

MONITORING WELL RECORD FOR LOW-FLOW PURGING

CoFC # 48207

Project Data:

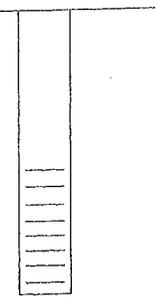
Project Name: Viacom (Airport)
 Ref. No.: 18036-1321

Date: 11/24/14
 Personnel: DOT

Monitoring Well Data:

Well No.: MW-34D
 Vapour PID (ppm): _____
 Measurement Point: _____
 Constructed Well Depth (m/ft): _____
 Measured Well Depth (m/ft): _____
 Depth of Sediment (m/ft): _____

Saturated Screen Length (m/ft): _____
 Depth to Pump Intake (m/ft)⁽¹⁾: _____
 Well Diameter, D (cm/in): _____
 Well Screen Volume, V_s (L)⁽²⁾: _____
 Initial Depth to Water (m/ft): 0.25



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		

0905	120			12.91	0.229	49.7	8.81	6.11	208		
0910	140	1.00	0.75	12.43	0.226	41.1	5.05	6.38	203		
0915		1.39	1.14	12.39	0.222	22.7	3.94	6.55	195		
0920	124	1.63	1.38	12.46	0.213	18.5	3.40	6.67	187		
0925	120	1.91	1.66	12.47	0.206	15.7	3.14	6.76	179		
0930	124			12.53	0.202	11.8	2.92	6.87	168		
0935	124	2.45	2.20	12.65	0.197	10.5	2.76	6.95	157		
0947		2.93	2.68	13.44	0.189	10.9	2.56	7.12	135		
0952	124	3.22	2.97	13.56	0.186	10.4	2.63	7.16	127		
0957				13.58	0.185	9.85	2.80	7.24	117		

- Notes:
- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
 - The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi r^2 L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi r^2 L \cdot (2.54)^3$, where r and L are in inches.
 - The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
 - Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p / V_s .
 - For conductivity, the average value of three readings < 1 mS/cm ± 0.005 mS/cm or where conductivity > 1 mS/cm ± 0.01 mS/cm.

Inst. Control #'s
 W/L Meter NF07581
 Turb NF06155
 Turb NF05040

Start Purge @ 0850

Dave Tyan

SAMPLE ID WG-18036-112414-SG-004

SAMPLE TIME 1025 Page 1 of 1

MONITORING WELL RECORD FOR LOW-FLOW PURGING

CofC# 48207

Project Data:

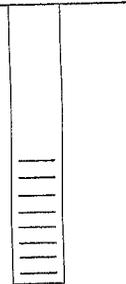
Project Name: VIACOM SEMI ANNUAL
 Ref. No.: 18036-2014

Date: 11/24/14
 Personnel: SB

Monitoring Well Data:

Well No.: MW-35
 Vapour PID (ppm): _____
 Measurement Point: _____
 Constructed Well Depth (m/ft): _____
 Measured Well Depth (m/ft): _____
 Depth of Sediment (m/ft): _____

Saturated Screen Length (m/ft): _____
 Depth to Pump Intake (m/ft)⁽³⁾: _____
 Well Diameter, D (cm/in): _____
 Well Screen Volume, V_s (L)⁽²⁾: _____
 Initial Depth to Water (m/ft): 12.91



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH ±0.1 Units	ORP (mV) ±10 mV	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required:				±3 %	±3 %	±10 %	±10 %	±0.1 Units	±10 mV		
1005	112	14.46	1.55	14.75	0.158	2.88	5.83	7.20	65		
1010		15.05	2.14	14.42	0.152	2.30	5.59	7.11	70		
1015	100	15.52	2.61	14.19	0.150	3.87	5.29	7.03	75		
1020		16.10		14.15	0.151	3.42	4.87	6.98	78		
1025		16.51		14.12	0.151	3.18	4.80	6.96	81		

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p / V_s .

INST CONTROL #5
 HORIBA NFO4388
 W/L METER-NFO6118
 TURBIDIMETER-00192

START PURGE @ 0955

[Handwritten Signature]

SAMPLE ID# WG-1803L-1124K-SG-00L2

SAMPLE TIME 1145 Page 1 of 1

MONITORING WELL RECORD FOR LOW-FLOW PURGING

CoC # 48207

Project Data:

Project Name: VIACOM SEMI ANNUAL Date: 11/24/14
 Ref. No.: 1803L-2014 Personnel: SG

Monitoring Well Data:

Well No.: MW-2
 Saturated Screen Length (m/ft): _____
 Vapour PID (ppm): _____
 Depth to Pump Intake (m/ft)⁽¹⁾: _____
 Measurement Point: _____
 Well Diameter, D (cm/in): _____
 Constructed Well Depth (m/ft): _____
 Well Screen Volume, V_s (L)⁽²⁾: _____
 Measured Well Depth (m/ft): _____
 Initial Depth to Water (m/ft): 6.28
 Depth of Sediment (m/ft): _____



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required:				±3 %	±3 %	±10 %	±10 %	±0.1 Units	±10 mV		
1115	96	7.51	1.23	15.40	11.3	0.93	0.65	9.54	-93		
1120		8.07	1.79	15.19	11.3	0.45	0.23	9.47	-91		
1125	96	8.63	2.35	15.26	11.2	0.99	0.08	9.52	-94		
1130		9.05		15.38	11.2	0.34	0.19	9.48	-90		
1135	96	9.52		15.27	11.2	0.19	0.09	9.45	-89		
1140		10.10		15.31	11.1	0.14	0.00	9.41	-83		

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where $r = (D/2)$ and L are in cm. For imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 ml/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .

INST CONTROL #5
 HORIBA NFO4388
 W/L METER - NFO6118
 TURBIDIMETER - 06192

START PURGE @ 1108

Dave J. Taylor

Sample ID WG-18036-112414-SG-007

Time 1325

CofC# 48207

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

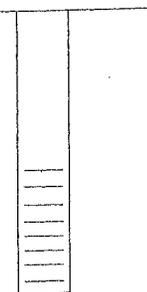
Project Name: Viacom (Airport)
 Ref. No.: 18036-2014

Date: 11/24/14
 Personnel: DJT

Monitoring Well Data:

Well No.: MW-32
 Vapour PID (ppm): _____
 Measurement Point: _____
 Constructed Well Depth (m/ft): _____
 Measured Well Depth (m/ft): _____
 Depth of Sediment (m/ft): _____

Saturated Screen Length (m/ft): _____
 Depth to Pump Intake (m/ft)⁽¹⁾: _____
 Well Diameter, D (cm/in): _____
 Well Screen Volume, V_s (L)⁽²⁾: _____
 Initial Depth to Water (m/ft): 0.25



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
			Precision Required ⁽⁵⁾ :	±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
1221	100	1.19	0.94	13.13	1.00	40.8	5.56	7.88	-143		
1226		1.43	1.18	13.23	0.766	28.6	4.53	7.83	-145		
1231	100			13.22	0.730	20.0	3.97	7.81	-143		
1236		1.76	1.51	13.39	0.640	14.4	3.73	7.89	-140		
1241	96			13.56	0.592	13.0	3.87	7.88	-128		
1246		2.40	2.15	13.59	0.517	11.6	3.93	7.86	-118		
1251	88			13.50	0.468	10.9	3.93	7.86	-111		
1256		3.13	2.88	13.59	0.409	11.8	3.93	7.84	-104		
1301	88			13.72	0.375	10.9	3.90	7.84	-96		
1306		3.76	3.51	13.78	0.354	12.4	4.04	7.84	-90		
1311	88			13.73	0.340	10.3	4.07	7.84	-85		
1316		4.20	3.95	13.65	0.333	10.2	4.10	7.83	-81		
1321				13.74	0.330	10.8	4.07	7.83	-77		

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot r^2 \cdot L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi \cdot r^2 \cdot L \cdot (2.54)^3$, where r and L are in inches.
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p / V_s .
- For conductivity, the average value of three readings < 1 mS/cm ± 0.005 mS/cm or where conductivity > 1 mS/cm ± 0.01 mS/cm.

Inst. Control #5
 w/L Meter NFO7581
 Horiba NFO6655
 Turb NFO5040

Start Purge @ 1212

[Handwritten Signature]

SAMPLE ID# WG-180312-112414-SG-008

SAMPLE TIME 1300

MONITORING WELL RECORD FOR LOW-FLOW PURGING

CofC # 48207

Project Data:

Project Name: VIACOM SEMI ANNUAL Date: 11/24/14
 Ref. No.: 180312-2014 Personnel: _____

Monitoring Well Data:

Well No.: MW-28
 Vapour PID (ppm): _____
 Measurement Point: _____
 Constructed Well Depth (m/ft): _____
 Measured Well Depth (m/ft): _____
 Depth of Sediment (m/ft): _____
 Saturated Screen Length (m/ft): _____
 Depth to Pump Intake (m/ft)⁽¹⁾: _____
 Well Diameter, D (cm/in): _____
 Well Screen Volume, V_s (L)⁽²⁾: _____
 Initial Depth to Water (m/ft): 5.50



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH ±0.1 Units	ORP (mV) ±10 mV	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
1235	100	6.07	0.57	16.20	9.28	2.10	0.97	10.91	-184		
1240	104	6.21	0.71	15.99	9.29	2.76	0.53	11.00	-189		
1245		6.37	0.87	15.89	9.24	1.79	0.16	11.07	-194		
1250	104	6.50	1.00	15.83	9.18	1.59	0.03	11.11	-197		
1255		6.62		15.79	9.17	1.26	0.00	11.13	-199		

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where $r = (D/2)$ and L are in cm. For imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .

INST CONTROL #S
 HORIBA NFO4388
 W/L METER - NFO6118
 TURBIDIMETER - 06192

START PURGE @ 1226

[Handwritten signature]

BLIND DUPLICATE - WG-18036-112414-011

SAMPLE TIME 1400

SAMPLE ID# WG-18036-112414-98-010

SAMPLE TIME 1400

Page 1 of 1

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: VIACOM SEMI ANNUAL
 Ref. No.: 18036-2014

Date: 11/24/14
 Personnel: SG

DUP

Coff # 48207

Monitoring Well Data:

Well No.: MW-5
 Vapour PID (ppm): _____
 Measurement Point: _____
 Constructed Well Depth (m/ft): _____
 Measured Well Depth (m/ft): _____
 Depth of Sediment (m/ft): _____

Saturated Screen Length (m/ft): _____
 Depth to Pump Intake (m/ft)⁽¹⁾: _____
 Well Diameter, D (cm/in): _____
 Well Screen Volume, V_s (L)⁽²⁾: _____
 Initial Depth to Water (m/ft): 1.90

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH ±0.1 Units	ORP (mV) ±10 mV	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
1338	100	3.10	1.20	15.50	1.91	1.41	1.39	9.80	-107		
1343		3.58	1.68	15.55	1.86	0.92	0.38	10.08	-124		
1348	96	4.01	2.11	15.58	1.84	1.69	0.00	10.20	-131		
1353		4.49		15.82	1.82	0.65	0.00	10.26	-136		
1358		4.91		15.59	1.82	0.80	0.00	10.27	-138		

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, V_s=π*(r²)*L in mL, where r=(D/2) and L are in cm. For imperial units, V_s=π*(r²)*L*(2.54)³, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.

INST CONTROL #28
 HORIBA NFO4388
 W/L METER - NFO6118
 TURBIDIMETER - 06192

START PURGE @ 1331

[Handwritten Signature]

TAILGATE SAFETY MEETING FORM
SMALL GROUP FORMAT - MULTIPLE DAYS
[INSERT SITE NAME AND LOCATION]

Date: 11/24/14 Time: 0830 : Presenter D. Tyran

Safety topics/items discussed:

Traffic Safety! 4 wells will require cones and
some flagging to warn motorists of people in the drive
lane Practice STAR

Site personnel in attendance:

Print Name	Signature	Company
<u>David Tyran</u>	<u>[Signature]</u>	<u>CRA</u>
<u>Shawn Gardner</u>	<u>[Signature]</u>	<u>CRA</u>

Date: _____ Time: _____ : Presenter _____

Safety topics/items discussed:

Print Name	Signature	Company

Date: _____ Time: _____ : Presenter _____

Safety topics/items discussed:

Print Name	Signature	Company

Viacom (Buffalo Airport)
Semi-Annual G/W Sampling

April 1, 2015

Project # 18036-2014
Field File

18036-2014

Viacom (Buffalo Airport)

DAILY LOG

4/1/15 YSI PRO PLUS # 6SH06212 CALABRATION USING PH 4.00 AUTO

CAL LOT# C471810 EXP. 7/15

PH 4.00 BEFORE 4.00 AFTER 4.00

COND 4.49 BEFORE 4.52 AFTER 4.49

DO % BAR. 747.7 94%

YSI PRO PLUS # NF07602 CALABRATION USING SAME AS ABOVE CAL SOLUTION

PH 4.00 BEFORE 3.99 AFTER 4.00

COND 4.49 BEFORE 4.41 AFTER 4.49

DO % BAR 747.7 98.5%

0823 ONSITE DJT/SG WEATHER - SUNNY WINDS N.O. 5MPH

GET ESCORT FOR DRIVING ACROSS TARMAC.

0840 SET UP ON MW-34 PURGE + SAMPLE LOW FLOW DJT Purge & Sample 34D

0940 SET UP ON MW-35 PURGE + SAMPLE DJT 10/10 Purge & Sample MW 30

1119 SET UP ON MW-2 PURGE + SAMPLE 1100 DJT Purge & Sample MW 33

1242 SET UP ON MW-28 PURGE + SAMPLE 1135 DJT Purge & Sample MW 32

1356 SET UP ON MW-31 PURGE + SAMPLE 1250 DJT Purge & Sample MW 5.

TRIPBLANK - TB-18036-040115-SG (2)

(DJT)

1519 OFFSITE

[Handwritten signature]

VIACOM
QUARTERLY WATER LEVELS

Date: 4/1/15
 Crew: SG/DJT
 Water Level #: NFOG118, NFOG117

Well ID	Time	Water Level	PID
MW-32	1137	0.44	
MW-2	1123	6.87	
MW-28	1241	5.85	
CSMH-3	NA		
MW-5	1258	2.59	
CSMH-2	NA		
MW-31	1351	5.01	
MW-30	1009	3.92	
CSMW-1	NA		
MW-34	0850	2.65	
MW-34D	0849	0.06	
MW-33	1057	5.18	
MW-35	1000	12.22	

NOTES:

Dave Egan

Sample ID WG-18036-04015-DT-002

Time 1000

MONITORING WELL RECORD FOR LOW-FLOW PURGING

GAC# 48216

Project Data:

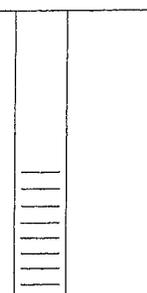
Project Name: Yacom (Airport)
 Ref. No.: 18036-2014

Date: 4/1/15
 Personnel: DJT

Monitoring Well Data:

Well No.: MW-340
 Vapour PID (ppm): _____
 Measurement Point: _____
 Constructed Well Depth (m/ft): _____
 Measured Well Depth (m/ft): _____
 Depth of Sediment (m/ft): _____

Saturated Screen Length (m/ft): _____
 Depth to Pump Intake (m/ft)⁽¹⁾: _____
 Well Diameter, D (cm/in): _____
 Well Screen Volume, V_s (L)⁽²⁾: _____
 Initial Depth to Water (m/ft): 0.06



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
			Precision Required ⁽⁵⁾ :	±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
0908	90	0.80	0.74	7.2	0.267	93	0.36	7.40	70.9		
0913				7.0	0.264	95.6	0.36	7.72	20.8		
0918	100	1.01	0.95	7.2	0.263	45.1	0.30	7.74	-36.8		
0923				7.2	0.262	24.9	0.31	7.87	-54.4		
0928	Peristal Pump died			See school Pump 13							
0933	116	1.49	1.43	8.1	0.258	38.2	1.15	7.86	43.2		
0938	96			7.9	0.263	22.2	0.48	7.89	-10.0		
0943	100	1.73	1.67	7.8	0.263	19.3	0.38	7.87	-41.8		
0948	100			8.0	0.262	17.6	0.29	7.89	-62.0		
0953		2.19	2.13	8.1	0.262	18.1	0.32	7.89	-72.0		
0958				7.9	0.263	18.1	0.32	7.89	-76.9		

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Inst. Control #'s
 w/ Meter NFO6117
 Turb. NFO5040
 YSI NFO7602

Dave Styan

Start Purge 0858

BLIND DUPLICATE-WG-18032-040115-SB-005

SAMPLE TIME 1055

SAMPLE ID#WG-18032-040115-SB-003

SAMPLE TIME 1055

MONITORING WELL RECORD FOR LOW-FLOW PURGING CWC# 48216

Project Data:

Project Name: VIACOM SEMI-ANNUAL
 Ref. No.: 18032-2014

Date: 4/1/15
 Personnel: SB

DLIP

Monitoring Well Data:

Well No.: MW-35
 Vapour PID (ppm): _____
 Measurement Point: _____
 Constructed Well Depth (m/ft): _____
 Measured Well Depth (m/ft): _____
 Depth of Sediment (m/ft): _____

Saturated Screen Length (m/ft): _____
 Depth to Pump Intake (m/ft)⁽¹⁾: _____
 Well Diameter, D (cm/in): _____
 Well Screen Volume, V_s (L)⁽²⁾: _____
 Initial Depth to Water (m/ft): 12.22



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
			Precision Required ⁽⁵⁾ :	±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
1015	104	13.00	0.78	8.8	0.342	16.9	1.01	7.62	97.7		
1020		13.51	1.29	9.0	0.332	20.8	0.65	7.61	76.2		
1025	106	14.02	1.80	9.0	0.332	19.1	0.60	7.61	66.2		
1030		14.58	2.36	9.1	0.333	19.3	0.56	7.61	56.9		
1035		15.14	2.92	9.3	0.334	20.1	0.54	7.61	41.5		
1040	106	15.57	3.35	9.3	0.336	20.7	0.52	7.61	54.6		
1045		16.01	3.79	9.4	0.338	21.3	0.56	7.61	58.3		
1050		16.68		9.6	0.340	20.0	0.55	7.61	56.8		

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where r ($r = D/2$) and L are in cm. For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p / V_s .
- For conductivity, the average value of three readings < 1 mS/cm ± 0.005 mS/cm or where conductivity > 1 mS/cm ± 0.01 mS/cm.

INST. CONTROL #S
 YSI - BSH06212
 W/L METER - NFOU118
 TURBIDIMETER - BSH 60192

START PURGE @ 1008

David J. Taylor

Sample ID WG-18036-040115-DST-006

Time 1130

MONITORING WELL RECORD FOR LOW-FLOW PURGING

CofC# 48216

Project Data:

Project Name: Viacom (Airport)
 Ref. No.: 18036-2014

Date: 4-1-15
 Personnel: DST

Monitoring Well Data:

Well No.: MW-33

Vapour PID (ppm): _____
 Measurement Point: _____

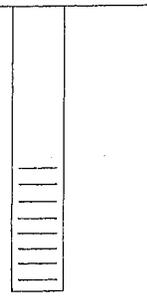
Saturated Screen Length (m/ft): _____
 Depth to Pump Intake (m/ft)⁽¹⁾: _____

Constructed Well Depth (m/ft): _____
 Measured Well Depth (m/ft): _____

Well Diameter, D (cm/in): _____
 Well Screen Volume, V_s (L)⁽²⁾: _____

Depth of Sediment (m/ft): _____

Initial Depth to Water (m/ft): 5.18



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
			Precision Required ⁽⁵⁾ :	±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		

1116	104	6.08	0.90	7.9	1.51	3.11	3.76	7.91	67.3		
1121				7.7	1.52	3.60	3.77	7.90	64.2		
1126	96	6.82	1.64	7.8	1.52	3.62	3.81	7.91	62.7	Turb	3.24

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, V_s=π*(r²)*L in mL, where r (r=D/2) and L are in cm. For Imperial units, V_s=π*(r²)*L*(2.54)³, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Inst. Control #'s
 Turb. NFO5040
 YSI NFO7602
 w/c Meter NFO6117

Start Purge @ 1108

[Handwritten signature]

SAMPLE ID# WG-1803L-040115-SG-007

SAMPLE TIME 1225

MONITORING WELL RECORD FOR LOW-FLOW PURGING

CofC# 48216

Project Data:

Project Name: VIACOM SEMI-ANNUAL
Ref. No.: 1803L-2014

Date: 4/1/15
Personnel: SG

Monitoring Well Data:

Well No.: MW-2

Vapour PID (ppm):

Measurement Point:

Constructed Well Depth (m/ft):

Measured Well Depth (m/ft):

Depth of Sediment (m/ft):

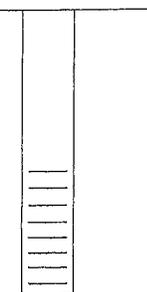
Saturated Screen Length (m/ft):

Depth to Pump Intake (m/ft)⁽¹⁾:

Well Diameter, D (cm/in):

Well Screen Volume, V_s (L)⁽²⁾:

Initial Depth to Water (m/ft): 6.87



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
			Precision Required ⁽⁵⁾ :	±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
1137	100	7.54	0.67	9.2	11.38	2.88	1.17	6.81	-50.3		
1142		8.05	1.18	9.5	11.35	2.03	1.14	6.86	-49.4		
1147		8.57	1.70	9.6	11.37	0.49	1.21	6.88	-20.0		
1152	100	9.21	2.34	9.7	10.93	0.48	2.42	6.95	29.7		
1157		9.75	2.88	9.7	10.76	0.49	2.80	6.98	57.3		
1202	102	10.26	3.39	9.7	10.71	0.23	2.73	6.97	68.4		
1207		10.77	3.90	9.8	10.69	0.29	3.41	6.98	73.6		
1212		11.27	4.40	9.9	10.66	0.33	2.88	6.98	75.2		
1217		11.80	4.93	10.0	10.62	0.30	2.82	6.98	77.1		
1222	100	12.23		10.1	10.60	0.15	2.75	6.98	81.1		

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p / V_s .
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

INST. CONTROL #3
VSI - GSH06212
W/L METER - NFOU118
TURBIDIMETER - GSH06192

START PURGE @ 1132

W.D. J. Yuan

Sample ID WG-18036-040115-DJT-010

Time 1340

CoFC# 48216

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Viccom (Airport)
 Ref. No.: 18036-2019

Date: 4-1-15
 Personnel: DJT

Monitoring Well Data:

Well No.: MW-5

Vapour PID (ppm): _____

Measurement Point: _____

Constructed Well Depth (m/ft): _____

Measured Well Depth (m/ft): _____

Depth of Sediment (m/ft): _____

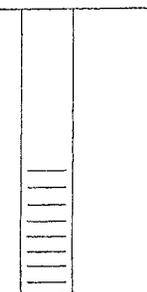
Saturated Screen Length (m/ft): _____

Depth to Pump Intake (m/ft)⁽¹⁾: _____

Well Diameter, D (cm/in): _____

Well Screen Volume, V_s (L)⁽²⁾: _____

Initial Depth to Water (m/ft): 2.59



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
			Precision Required ⁽⁵⁾ :	±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
1310	112			10.3	1.98	4.04	0.41	8.11	67.1		
1315	76	3.91	1.32	10.9	1.95	1.50	0.29	8.12	50.4		
1320	76			10.7	1.94	2.19	0.30	8.14	35.6		
1325	60			11.1	1.94	1.86	0.30	8.12	25.6		
1330		4.83	2.24	11.3	1.96	1.02	0.34	8.11	17.4		
1335				10.9	1.94	0.78	0.30	8.12	10.3		

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p / V_s .
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Inst. Control #'s
 YSI NFO7602
 w/L Meter NFO6117
 Turb NFO5040

start Purge @ 1306

David S. Taylor

SAMPLE ID# WG-18036-040115-SG-011

SAMPLE TIME 1430

MS/MSD

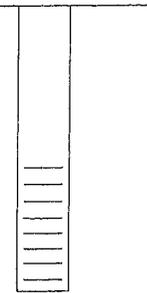
MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: VIACOM SEMI-ANNUAL Date: 4/1/15
 Ref. No.: 18036-2014 Personnel: SG

Monitoring Well Data:

Well No.: MW-31
 Vapour PID (ppm): _____ Saturated Screen Length (m/ft): _____
 Measurement Point: _____ Depth to Pump Intake (m/ft)⁽¹⁾: _____
 Constructed Well Depth (m/ft): _____ Well Diameter, D (cm/in): _____
 Measured Well Depth (m/ft): _____ Well Screen Volume, V_s (L)⁽²⁾: _____
 Depth of Sediment (m/ft): _____ Initial Depth to Water (m/ft): 5.01



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
			Precision Required ⁽⁵⁾ :	±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
1406	62	5.42	0.41	10.5	10.28	3.96	0.85	7.67	-122.6		
1411		5.71	0.70	10.9	9.52	3.72	1.26	7.55	-81.6		
1416	60	5.98	0.97	11.2	9.19	2.14	1.39	7.56	-58.8		
1421		6.26		10.9	9.21	2.86	1.36	7.54	-57.4		
1426		6.50		11.0	9.24	1.32	1.41	7.53	-52.7		

- Notes:
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
 - (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where r (=D/2) and L are in cm. For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
 - (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
 - (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p/V_s .
 - (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

INST CONTROL #8
 YSI-GSH06212
 W/L METER-NFO6118
 TURBIDIMETER-GSH06192

START PURGE @ 1400

Dave J. Ryan

BNIA Post-closure
Monitoring

June 18, 2015

Project # 18036-2014

FIELD DATA RECORD FORM
METER, WATER LEVEL

(QSF-251D)

Control No.: NFOG118 NFOG117
Date: 6-18-15
User: S. Gardner / D. Tyrann

Project No.: 18036-2014
Project Name: BNIA GW Sampling
Location: Buffalo Airport

Additional Equipment Control Numbers and Descriptions:

FIELD PROCEDURE BEFORE USE:

	<i>Check when completed</i>
o Check for broken or missing parts.	<input checked="" type="checkbox"/>
o Check battery	<input checked="" type="checkbox"/>
o Check operation of buzzer.	<input checked="" type="checkbox"/>
o Check operation of signal light.	<input checked="" type="checkbox"/>
o Test probe in water to ensure unit operates, both visually and audibly.	<input checked="" type="checkbox"/>
o Check cable.	<input checked="" type="checkbox"/>

Filing: Field File

Signature: _____

Dave J Tyrann

Date: 6-18-15

Reference No. 18036-2014

WATER LEVEL MEASUREMENT EQUIPMENT AND SUPPLY CHECKLIST

INSTRUMENTS:

- Water level indicator
- Steel Tape
- Oil/Water Interface Probe
- Air Monitoring Equipment

SUPPLIES

- Foil
- Tyveks (assorted sizes and types)
- Paper towels
- Decontamination Fluids
 - 2-Propanol
 - Deionized water
 - Hexane (pesticide grade)
 - Methanol (pesticide grade)
 - Other
- Trash bags
- Plastic spray bottles

PERSONAL PROTECTIVE EQUIPMENT:

- Latex gloves
- Hard hats/liner(s)
- Field overboots
- Work gloves (cotton and chemical resistant)
- Safety glasses/or side shields on OSHA-approved prescription lenses
- First Aid Kit
- Respirators
- Check Health and Safety Plan

DOCUMENTATION

- Well logs
- Notebook/Field book
- Photolog
- Site pass/badge
- Previous well logs/previous historical well data
- Site map
- Blank well data forms

MISCELLANEOUS:

- Well Cap Keys
- Bolt cutters
- Camera/film
- Knife
- Spare batteries for instruments
- Lock deicer (winter)
- Pen/pencil/indelible marking pen
- Tool box
- Spare locks/keys
- On Site Transportation (all Terrain Vehicle/Snowmobiles)

Completed by: Dave J. Tyson

Date: 6-18-15

CRA

Date: 6-18-15

Reference No. 18036-2014

GROUNDWATER SAMPLING EQUIPMENT AND SUPPLY CHECKLIST

EQUIPMENT

- Required Sampling Equipment
(as per Work Plan or QAPP)

INSTRUMENTS

- Water level indicator
- Thermometer *
- pH meter *
- Conductivity probe *
- Turbidity meter
- HNu/OVA/Microtip
- Air Monitoring Equipment
- YSI Multi-Parameter*

SUPPLIES

- Gasoline can/gas
- Polypropylene rope
- Aluminum foil
- Paper towels
- pH-buffer solution(s)
- Conductivity standard solution(s)
- Decontamination Fluids
(As per Work Plan and QAPP)
- Sample jars (extra)
- Sample jar labels (CRA) materials
- Cooler(s)/ice packs/packing materials
- Trash bags
- Sample preservatives
- Plastic spray bottles
- Plastic basin or pan
- Sample filter (On line or External Filter)
- Polyethylene sheeting
- First Aid Kit
- Personal Protective Equipment (as per HASP)

DOCUMENTATION

- Chain of Custody Forms
- Well logs
- Notebook/Field book
- Photolog
- Site pass/badge
- Federal Express manifests
- Previous well logs/previous historical well data
- Site map
- Blank well data forms

MISCELLANEOUS

- Well Cap Keys
- Bolt cutters
- Camera/film
- Knife
- Spare batteries for instruments
- Lock Deicer (winter)
- Reinforced packing tape
- Pen/pencil/indelible marking pen
- Tool box
- Spare locks/keys
- On Site Transportation (all Terrain Vehicle/Snowmobiles)

Completed by: *Daryl Tysia*

Date: _____

CRA

Date: 6-23-15

Reference No.: 18036-2014

PROJECT PLANNING COMPLETION AND FOLLOW-UP CHECKLIST

PRIOR PLANNING AND COORDINATION:

- Confirm well numbers, location and accessibility
- Review of project documents, Health and Safety Plan (HASP), sampling Quality Assurance/Quality Control (QA/QC) and site-specific sampling requirements
- Historical well data; depth, pH, performance and disposition of purge water
- Site access notification and coordination
- Coordination with laboratory through CRA Chemistry Group
- Procurement, inventory and inspection of all equipment and supplies
- Prior equipment preparation, calibration or maintenance
- ~~NA~~ All utilities located and approved

FIELD PROCEDURE:

- Instruments calibrated daily
- Sampling equipment decontaminated in accordance with the QAPP
- Field measurements and sampling details logged in appropriate field books or an appropriate field form
- Well volume calculated and specified volumes removed
- Specified samples, and QA/QC samples taken per Quality Assurance Project Plan (QAPP)
- Samples properly labeled, preserved and packed
- Sampling locations secured or completed according to Work Plan
- Sample date times, locations and sample numbers have all been recorded in applicable log(s)
- Samples have been properly stored if not shipped/delivered to lab same day
- Samples were shipped with complete and accurate Chain of Custody Record

FOLLOW-UP ACTIVITIES:

- Questionable measurements field verified
- Confirm all samples collected
- All equipment has been maintained and returned
- Sampling information reduced and required sample keys and field data distributed
- Chain of Custody Records filed
- Expendable stock supplies replaced
- CRA and client-controlled items returned (i.e., keys)
- Arrange disposal of investigation generated wastes with client
- Confirm all samples collected

Completed by: *Dave J. Tye*

Date: 6-23-15

CRA

Via com (Buffalo Airport)

18036-2014

DAILY LOG

6/18/15 Partly Sunny 69-75°F

0808 DJT, SG on-site waiting for escort to get in secure area

0820 escort arrived drive out and setup on MW 34D Purge & Sample

Trip Blank = TB-18036-061815-DJT 2x40ml

0955 setup on MW 30 purge & Sample

1040 Setup on MW 33 purge & Sample

1150 Setup on MW 32 purge & Sample

1300 Meet SG @ MW 15 purge & Sample

1454 off-site

DJT

Dave J. Ryan

DAILY LOG

6/18/15 YSI PRO SERIES # NFO7602 CALABRATION USING PH 4.00 AUTO
CAL SOLUTION LOT# C57765A EXP. 3/16

PH 4.00 BEFORE 4.05 AFTER 4.00

COND 4.49 BEFORE 4.30 AFTER 4.49

DO% BAR. 745.0 95.6% READING 8.15

HORIBA U-22 # NFO3583 CALABRATION USING SAME AS ABOVE CAL SOLUTION

PH 4.00 BEFORE 4.71 AFTER 3.99

COND 4.49 BEFORE 4.57 AFTER 4.50

DO% BEFORE 8.00 AFTER 8.23

0807 ONSITE SG/DO/T WEATHER - CLOUDY, CHANCE OF RAIN 71°F WINDS S 5MPH
GET AIRPORT ESCORT FOR TRAVELING ON TARMAC, TAILGATE SAFETY MEETING

0835 SET UP ON MW-34 PURGE + SAMPLE

METHOD - LOW FLOW USING MASTERFLEX PERISTALTIC PUMP W/ DEDICATED TUBING

0934 SET UP ON MW-35 PURGE + SAMPLE

1044 SET UP ON MW-2 PURGE + SAMPLE

1150 SET UP ON MW-28 PURGE + SAMPLE

1250 SET UP ON MW-5 PURGE + SAMPLE

1350 SET UP ON MW-31 PURGE + SAMPLE

1441 BW SAMPLING COMPLETE, PUT BUCKETS OF PURGE WATER
IN O+M BUILDING

1454 OFFSITE

(NST)

Dave J. Lynn

18036-2014

**FIELD DATA RECORD FORM
METER, TURBIDITY (PORTABLE) HACH 2100P**

(QSF-421D)

Control No.: B54106192
 Date: 6/18/15
 User: SG/DJT

Project No.: 180310-2014
 Project Name: VIACOM YALY GW SAMPLING

Location: _____

Additional Equipment Control Numbers and Descriptions: BUFFALO AIRPORT
200 NTU LOT# A4253 EXP. DEC.15', 100 NTU LOT# A4252 EXP. DEC.15', 800 NTU LOT# A4247 EXP. DEC.15'

FIELD PROCEDURE BEFORE USE:

Do Not Calibrate in the Field - In-House Calibration Only by Field Equipment Manager

Check when completed

Check kit contents;

- Meter
- Low 0-10, medium 0-100, high 0-1000 standards
- Extra AA batteries
- Sample vials

Test and record Gelex standards:

	Gelex Standard	Meter Reading
◦ Low 0-10 ^① <u>20</u>	<u>20</u>	<u>23.1</u>
◦ Medium 0-100	<u>100</u>	<u>106</u>
◦ High 0-1000	<u>800</u>	<u>796</u>

Note: Condensation on outside of sample bottles affects meter readings.

Filing: Field File

Signature: 

**FIELD DATA RECORD FORM
METER, TURBIDITY (PORTABLE) HACH 2100P**

(QSF-421D)

Control No.: NF05040 Project No.: 18036-2014
 Date: 6/18/15 Project Name: VIACOM VALLEY GW SAMPLING
 User: SG/DJT Location: _____

Additional Equipment Control Numbers and Descriptions: BUFFALO AIRPORT
200 NTU LOT# AA253 EXP. DEC 15', 100 NTU LOT# AA252 EXP. DEC 15', 800 NTU LOT# AA2A7 EXP. DEC 15'

FIELD PROCEDURE BEFORE USE:

Do Not Calibrate in the Field - In-House Calibration Only by Field Equipment Manager

Check when completed

Check kit contents;

- Meter
- Low 0-10, medium 0-100, high 0-1000 standards
- Extra AA batteries
- Sample vials

Test and record Gelex standards:

	Gelex Standard	Meter Reading
◦ Low 0-10	<u>20</u>	<u>22.1</u>
◦ Medium 0-100	<u>100</u>	<u>106</u>
◦ High 0-1000	<u>800</u>	<u>811</u>

Note: Condensation on outside of sample bottles affects meter readings.

Filing: Field File

Signature: *Spencer Gardner*

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring Date: 6.18.15
 Ref. No.: 018036-2014 Personnel: DJT

Monitoring Well Data:

Well No.: MW-30 Well Diameter, D (inches): _____
 Measurement Point: Top of Well Riser Well Screen Volume, V_s (L)⁽²⁾: _____
 Constructed Well Depth (ft): _____ Initial Depth to Water (ft): 3.32
 Measured Well Depth (ft): _____ General Well Condition: _____

Sampling Data

Sample No.: WG-18036-061815-DJT-003 Chain of Custody No.: 48226
 Sample Time: 1030 Parameters: VOCs Metals
 MS/MSD or Dup: No

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH	ORP (mV)	Turbidity NTU	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Start Purge	<u>1002</u>										
<u>1012</u>	<u>80</u>	<u>4.56</u>	<u>1.24</u>	<u>16.82</u>	<u>0.66</u>	<u>0.718</u>	<u>6.73</u>	<u>-192</u>	<u>19.4</u>		
<u>1017</u>	<u>100</u>	<u>5.21</u>	<u>1.89</u>	<u>15.98</u>	<u>0.00</u>	<u>0.725</u>	<u>6.77</u>	<u>-203</u>	<u>13.1</u>		
<u>1022</u>		<u>5.97</u>	<u>2.65</u>	<u>15.70</u>	<u>0.00</u>	<u>0.723</u>	<u>6.79</u>	<u>-207</u>	<u>8.10</u>		
<u>1027</u>				<u>15.94</u>	<u>0.00</u>	<u>0.722</u>	<u>6.82</u>	<u>-210</u>	<u>6.41</u>		

Comments: _____

Instrument Control Numbers

Notes:
 (1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.
 (2) The well screen volume will be based on a 5-foot screen length (L). For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches.
 (3) The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min.
 (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p/V_s.

Water Level Meter NF06117
 Multi-parameter meter NF03583
 Turbidimeter NF05040
 Signature Dae J. Ryan

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring Date: 6.18.15
 Ref. No.: 018036-2014 Personnel: DJT

Monitoring Well Data:

Well No.: MW-33 Well Diameter, D (inches): 2
 Measurement Point: Top of Well Riser Well Screen Volume, V_s (L)⁽²⁾: _____
 Constructed Well Depth (ft): 24.9 Initial Depth to Water (ft): 5.02
 Measured Well Depth (ft): _____ General Well Condition: _____

Sampling Data

Sample No.: WG-18036-061815-DJT-005 Chain of Custody No.: 48226
 Sample Time: 1130 Parameters: VOCs Metals
 MS/MSD or Dup: No

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH	ORP (mV)	Turbidity NTU	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Start Purge	<u>1046</u>		Precision Required:	±3 %	±10 %	±3 %	±0.1 Units	±10 mV	±10 %		
1053	96	5.85	0.83	17.10	5.18	1.36	6.93	-35	12.9		
1058		6.37	1.35	16.79	0.89	1.37	7.03	-50	4.68		
1103	100	7.02	2.00	16.61	0.52	1.38	7.08	-56	2.76		
1108		7.46	2.44	16.73	0.35	1.38	7.11	-59	2.20		
1113	96	7.97	2.95	16.51	0.34	1.39	7.14	-59	1.81		
1118		8.43	3.41	16.97	0.23	1.38	7.16	-59	1.27		
1123	80	9.09	4.07	16.72	0.20	1.38	7.19	-58	3.96		
1128				17.11	0.18	1.38	7.21	-57	2.29		

Comments: _____

Instrument Control Numbers

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom. Water Level Meter NF06117

(2) The well screen volume will be based on a 5-foot screen length (L). For Imperial units, V_s=π*(r²)*L* (2.54)³, where r and L are in inches. Multi-parameter meter NF03583

(3) The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min. Turbidimeter NF05040

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged= V_p/V_s. Signature Dave J. Ryan

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring

Date: 6/18/15

Ref. No.: 018036-2014

Personnel: SG

Monitoring Well Data:

Well No.: MW-34

Well Diameter, D (inches): 2

Measurement Point: Top of Well Riser

Well Screen Volume, V_s (L)⁽²⁾: _____

Constructed Well Depth (ft): 31.95

Initial Depth to Water (ft): 2.90

Measured Well Depth (ft): _____

General Well Condition: GOOD

Sampling Data

Sample No.: WG-18036-061815-SG-002

Chain of Custody No.: 48226

Sample Time: 0920

Parameters: VOCs Metals

MS/MSD or Dup _____

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH	ORP (mV)	Turbidity NTU	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
0849	102	3.80	0.90	15.1	9.5	0.99	6.51	107.7	1.23		
0854		4.26	1.36	15.2	0.77	0.97	7.06	101.0	1.22		
0859	100	4.76	1.86	15.3	0.71	0.96	7.25	116.2	0.75		
0904		5.20	2.30	15.4	0.72	0.95	7.36	97.3	1.18		
0909		5.65	2.75	15.7	0.73	0.95	7.44	93.0	1.46		
0914	100	5.99	3.09	15.8	0.75	0.95	7.46	91.6	1.04		

Comments: _____

Instrument Control Numbers

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom. Water Level Meter NF06118

(2) The well screen volume will be based on a 5-foot screen length (L). For Imperial units, $V_s = \pi(r)^2 L (2.54)^3$, where r and L are in inches. Multi-parameter meter YSI - NF07602

(3) The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min. Turbidimeter BSH 06192

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p/V_s . Signature Shawn Plaudner

START PURGE @ 0842

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring
 Ref. No.: 018036-2014

Date: 6/18/15
 Personnel: SG

Monitoring Well Data:

Well No.: MW-2 Well Diameter, D (inches): 2
 Measurement Point: Top of Well Riser Well Screen Volume, V_s (L)⁽²⁾: _____
 Constructed Well Depth (ft): 26.5 Initial Depth to Water (ft): 6.70
 Measured Well Depth (ft): _____ General Well Condition: Good



Sampling Data

Sample No.: WG-18036-001815-SG-008 Chain of Custody No.: 48226
 Sample Time: 1130 Parameters: VOCs Metals
 MS/MSD or Dup: No

Time	Pumping Rate (mL/min)	Depth to Water (mft)	Drawdown from Initial Water Level ⁽³⁾ (mft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH	ORP (mV)	Turbidity NTU	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
1100	108	7.50	0.80	15.1	1.37	11.16	6.85	-114.1	7.89		
1105		8.21	1.51	15.0	0.89	11.11	6.84	-116.7	8.88		
1110	106	8.75	2.05	14.9	0.74	10.97	6.85	-120.6	9.24		
1115		9.29	2.59	14.7	0.66	10.73	6.86	-129.0	10.12		
1120		9.81	3.11	14.8	0.62	10.69	6.85	-133.6	11.71		
1125		10.40	3.70	14.9	0.58	10.62	6.85	-139.2	9.89		

Comments: _____

Instrument Control Numbers

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom. **Water Level Meter**
- (2) The well screen volume will be based on a 5-foot screen length (L). For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches.
- (3) The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min. **Multi-parameter meter**
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually

NFO0118
YSI - NFO7602

START PURGE @ 1053

Turb. GSH 06192

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring

Date: 6/18/15

Ref. No.: 018036-2014

Personnel: SG

Monitoring Well Data:

Well No.: MW-28

Well Diameter, D (inches): 2

Measurement Point: Top of Well Riser

Well Screen Volume, V_s (L)⁽²⁾: _____

Constructed Well Depth (ft): 20.5

Initial Depth to Water (ft): 5.76

Measured Well Depth (ft): _____

General Well Condition: GOOD

Sampling Data

Sample No.: WG-18036-001815-SG-010

Chain of Custody No.: 48226

Sample Time: 1220

Parameters: VOCs Metals

MS/MSD or Dup No

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH	ORP (mV)	Turbidity NTU	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
1200	100	6.02	0.26	15.8	0.93	8.81	7.36	-142.0	1.22		
1205		6.20	0.44	15.3	0.79	8.74	7.31	-164.9	0.51		
1210	104	6.35	0.59	15.5	0.79	8.70	7.29	-181.0	1.05		
1215		6.51		15.6	0.78	8.70	7.29	-190.0	1.33		
1220		6.69		15.7	0.79	8.70	7.28	-194.4	2.69		

Comments: _____

Instrument Control Numbers

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom. Water Level Meter NF06118

(2) The well screen volume will be based on a 5-foot screen length (L). For Imperial units, $V_s = \pi(r^2)L(2.54)^3$, where r and L are in inches. Multi-parameter meter YSI NF07002

(3) The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min. Turbidimeter BSH06192

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p/V_s. Signature Shawn Daudner

START PURGE @ 1155

BNIA Quarterly
Post Closure Monitoring

September 10, 2015

7

Project # 18036-2014
Field File

BNIA 1/4' Ly Post Closure Monitoring

18036. 2014

DAILY LOG

GSH06214

9-10-15 Calibrate YSI Meter ~~AF-07602~~ with

Auto cal. Solution Lot# C577654 exp. 3/2016

	before	After
pH: 4.00	3.97	4.00
Cond 4.49	4.42	4.49
DO 36	109.236% ^{SD}	96.6

0715 DST on-site meet SG and our NFTA escort

Mostly overcast 62-70°F.

0740 Setup on MW-30 purge & Sample

0855 Setup on MW-34D purge & Sample

1000 Setup on MW-33 purge & Sample

1120 Setup on MW-32 purge & Sample

1255 setup with SG on MW-31 purge & Sample

clean up drop off purge water

1410 off-site

(DST) 9-10-15

David Ryan

BNIA QUARTERLY GW SAMPLING

DAILY LOG

9/10/15 YSI PRO SERIES # 651016212 CALABRATION USING

PH 4.00 AUTO CAL LOT#

PH 4.00 BEFORE 3.99 AFTER 4.00

COND 4.49 BEFORE 4.18 AFTER 4.50

DO BAR. 743.1 100% READING 7.91

0650 ONSITE SG WEATHER - SUN/ CLOUDS 65-70°F WINDS NNE 5-10 MPH

GET ESCORT FOR TAXI ON TARMAC

0738 SET UP ON MW-35 PURGE AND SAMPLE LOW FLOW MS/MED

TRIPBLANK - TB-18036-091015-SG (2)

0902 SET UP ON MW-34 PURGE AND SAMPLE

1005 SET UP ON MW-2 PURGE AND SAMPLE

1118 SET UP ON MW-28 PURGE AND SAMPLE

1215 SET UP ON MW-5 PURGE AND SAMPLE

1316 SET UP ON MW-31 PURGE AND SAMPLE

1404 SAMPLING COMPLETE CLEAN UP

1412 OFFSITE

18036-2014

9/10/15

Shawn Gardner

MONITORING WELL RECORD FOR LOW-FLOW PURGING

MS/MSD

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring Date: 9/10/15
 Ref. No.: 018036-2014 Personnel: S GARDNER

Monitoring Well Data:

Well No.: MW-35 Well Diameter, D (inches): _____
 Measurement Point: Top of Well Riser Well Screen Volume, V_s (L)⁽²⁾: _____
 Constructed Well Depth (ft): _____ Initial Depth to Water (ft): 13.69
 Measured Well Depth (ft): _____ General Well Condition: _____

Sampling Data

Sample No.: WG-18036-091015-SS-002 Chain of Custody No.: 48229
 Sample Time: 0825 Parameters: VOCs Metals
 MS/MSD or Dup: MS/MSD

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH	ORP (mV)	Turbidity NTU	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Start Purge	<u>0749</u>			±3 %	±10 %	±3 %	±0.1 Units	±10 mV	±10 %		
0803	100	15.06	1.37	14.1	1.25	0.522	7.76	-173.1	1.73		
0808	96	15.40	1.71	14.2	1.05	0.525	7.85	-173.2	1.09		
0813		15.78	2.09	14.1	0.92	0.526	7.89	-179.1	1.08		
0818		16.20	2.51	14.1	0.82	0.527	7.91	-180.3	1.25		
0823	96	16.72		14.0	0.80	0.530	7.89	-183.4	2.15		

Comments: _____

Instrument Control Numbers

Notes:
 (1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom. Water Level Meter NFO12118
 (2) The well screen volume will be based on a 5-foot screen length (L). For Imperial units, $V_s = \pi(r)^2 L (2.54)^3$, where r and L are in inches. Multi-parameter meter YSI 6SH013212
 (3) The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min. Turbidimeter NFO 5039
 (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p/V_s. Signature Shawn Gardner

MONITORING WELL RECORD FOR LOW-FLOW PURGING

DUP

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring
 Ref. No.: 018036-2014

Date: 9.10.15
 Personnel: D. Tyrann

Monitoring Well Data:

Well No.: MW-32 Well Diameter, D (inches): _____
 Measurement Point: Top of Well Riser Well Screen Volume, V_s (L)⁽²⁾: _____
 Constructed Well Depth (ft): _____ Initial Depth to Water (ft): 1.48
 Measured Well Depth (ft): _____ General Well Condition: _____

Sampling Data

Sample No.: WG-18036-091015-DT-007 Chain of Custody No.: 48229
 Sample Time: 1235 Parameters: VOCs Metals
 MS/MSD or Dup: Dup

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH	ORP (mV)	Turbidity NTU	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Start Purge	<u>1131</u>										
			Precision Required:	±3 %	±10 %	±3 %	±0.1 Units	±10 mV	±10 %		

1136	84	2.17	0.69	18.1	3.86	2.54	7.50	-195.0	2.84		
1141		2.63	1.15	18.3	0.80	2.50	7.51	-216.1	5.06		
1146	84	3.10	1.62	17.9	0.44	2.31	7.50	-222.4	2.55		
1151		3.50	2.02	18.1	0.34	2.14	7.48	-222.5	2.63		
1156	80	3.72	2.24	18.2	0.31	2.10	7.47	-223.8	3.27		
1201		4.02	2.54	18.0	0.33	1.90	7.54	-227.0	2.64		
1206	80	4.19	2.71	17.8	0.33	1.80	7.62	-230.4	2.21		
1211		4.40	2.92	17.8	0.29	1.64	7.64	-233.6	1.91		
1216	76	4.58	3.10	17.8	0.31	1.49	7.67	-236.2	2.12		
1221		4.66	3.18	17.7	0.30	1.42	7.63	-236.7	2.20		
1226	72	4.76	3.28	17.7	0.29	1.33	7.67	-237.7	2.79		
1231				17.8	0.28	1.20	7.67	-239.2	8.97		

Comments: Blind Dup WG-18036-091015-DT-009 Time 1235

Instrument Control Numbers

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 5-foot screen length (L). For Imperial units, $V_s = \pi \cdot (r)^2 \cdot L \cdot (2.54)^3$, where r and L are in inches.
- The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = Vp/Vs.

Water Level Meter NF06117
 Multi-parameter meter GSH06214
 Turbidimeter NF05040

Signature _____

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring
 Ref. No.: 018036-2014

Date: 9/10/15
 Personnel: S GARDNER

Monitoring Well Data:

Well No.: MW-31 Well Diameter, D (inches): _____
 Measurement Point: Top of Well Riser Well Screen Volume, V_s (L)⁽²⁾: _____
 Constructed Well Depth (ft): _____ Initial Depth to Water (ft): 3.88
 Measured Well Depth (ft): _____ General Well Condition: _____

Sampling Data

Sample No.: WG-18036-091015-S6-011 Chain of Custody No.: _____
 Sample Time: 1355 Parameters: VOCs Metals
 MS/MSD or Dup: NONE

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH	ORP (mV)	Turbidity NTU	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Start Purge	<u>1324</u>		Precision Required:	±3 %	±10 %	±3 %	±0.1 Units	±10 mV	±10 %		
1330	64	4.45	0.57	20.6	0.52	13.13	7.94	-191.5	17.6		
1335		4.86	0.98	20.9	0.33	12.75	7.90	-194.1	12.6		
1340	66	5.23	1.35	20.8	0.26	11.97	7.86	-192.7	8.70		
1345		5.60		20.5	0.23	11.88	7.84	-191.6	5.57		
1350		5.94		20.7	0.22	11.76	7.83	-189.7	4.25		

Comments: _____

Instrument Control Numbers

Notes: _____

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom. Water Level Meter NF06118

(2) The well screen volume will be based on a 5-foot screen length (L). For Imperial units, $V_s = \pi \cdot (r)^2 \cdot L \cdot (2.54)^3$, where r and L are in inches. Multi-parameter meter YSI 63H06212

(3) The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min. Turbidimeter NF05039

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p/V_s. Signature Shawn Gardner

BNIA SITE QUARTERLY WATER LEVEL RECORD

DATE 9-10-15

CREW DJT, SG

INSTRUMENT Nos. NF06117, NF06118

WELL NUMBER	GROUND ELEVATION	TOP OF CASING ELEVATION (A)	DEPTH TO WATER (B)	WATER LEVEL ELEVATION (A-B)	COMMENTS
	feet AMSL	feet AMSL	feet	feet AMSL	
MW-2	692.16	691.81	7.34	684.47	
MW-5	688.21	685.93	2.60	683.33	
MW-28	689.26	688.27	5.89	682.38	
MW-30	695.54	694.81	5.82	688.99	
MW-31	688.46	687.22	3.88	683.34	
MW-32	711.37	710.71	1.48	709.23	
MW-33	713.34	712.50	5.22	707.28	
MW-34	703.81	702.93	3.80	699.13	
MW-34D	703.23	701.79	5.22	696.57	
MW-35	698.86	698.46	13.69	684.77	

COMMENTS

SIGNATURE

Dave J. Ryan

⑤

BNIA

Post Closure Quarterly
Sampling

December 10, 2015

Project # 18036-2014
Field File

Viacom (Airport)

18036-2014

BNIA Post Closure DAILY LOG

12/10/15 Calibrate YSI meter control # NE07602
with auto cal solution Lot # C579417 exp. 7/2016

	Before	After
DO (Bar 739.1)	90.2%	96.1%
PH 4.00	4.09	4.00
Cond 4.49	4.70	4.49

Mostly cloudy 44-55°F winds 9-14 mph
0725 Meet NFA escort head out to wells @ end of
runway. Kl sampling stormwater. DST & SG to sample
monitoring wells

0755 set up on MW34D Purge & Sample

Trip Blank = TB-18036-121015-DT 2x 40ml

0900 set up on MW30 Purge & Sample

1000 set up on MW33 Purge & Sample

1058 set up on MW32 Purge & Sample

1420 Drop off water @ Bldg

1426 off site

DST
12/10/15

DeeL *gone*

DAILY LOG

12/10/15 HORIBA W-72 # NF07A01 CALABRATION USING PH 4.00

AUTO CAL LOT# C579A17 EXP. 7/16

PH 4.00	BEFORE	4.70	AFTER	4.00
COND 4.49	BEFORE	4.49	AFTER	4.49
TURB 0.0	BEFORE	0.0	AFTER	0.0
DO	BEFORE	8.60	AFTER	8.54

0712ONSITE SG WEATHER - OVERCAST 47-52°F WINDS S 5-10MPH

TAILGATE SAFETY MEETING, GET ESCORT TO GO ACROSS TARMAC

0755 SET UP ON MW-34 PURGE AND SAMPLE LOW FLOW

0843 SET UP ON MW-35 PURGE AND SAMPLE

0959 SET UP ON MW-2 PURGE AND SAMPLE

1220 SET UP ON MW-5 PURGE AND SAMPLE

1318 SET UP ON MW-31 PURGE AND SAMPLE

1420 SAMPLING COMPLETE, OFFSITE

SG 12/10/15

18036-2014

Shawn Hardman

Sample ID WG-18036-121015-DT-001
 Time 0845

Monitoring Well Record for Low-Flow Purging
 (Form SP-09)

Project Data:

Project Name: BNIA Quarterly
 Ref. No.: Viacom (Airport)
18036-2014

Date: 12/10/15
 Personnel: D. Tyson

CofC #
48965

Monitoring Well Data:

Well No.: MW34D
 Vapour PID (ppm): _____
 Measurement Point: _____
 Constructed Well Depth (m/ft): _____
 Measured Well Depth (m/ft): _____
 Depth of Sediment (m/ft): _____

Saturated Screen Length (m/ft): _____
 Depth to Pump Intake (m/ft)⁽¹⁾: _____
 Well Diameter, D (cm/in): _____
 Well Screen Volume, V_s (L)⁽²⁾: _____
 Initial Depth to Water (m/ft): 5.18



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required:				±3 %	±0.005 or 0.01 ⁽⁵⁾	±10 %	±10 %	±0.1 Units	±10 mV		
0812	140	5.66	0.48	12.2	0.205	38	0.79	7.20	-263		
0817	120	5.89	0.71	12.0	0.196	21	0.54	7.81	-312.6		
0822		6.12	0.94	12.0	0.196	20	0.46	8.14	-329.1		
0827		6.32	1.14	11.9	0.196	16	0.41	8.29	-330.6		
0832	120	6.62	1.44	12.0	0.200	14	0.35	8.44	-346		
0837		6.75	1.57	12.0	0.200	10	0.33	8.49	-345.3		
0842				12.0	0.202	9	0.30	8.57	-349.7		

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Inst. Control #'s
 W/L Meter NFO6117
 Turb NFO5042
 YSI NF07602

Start Purge @ 0803

[Handwritten signature]

Sample ID WGT 10030 12/10/15 01-11-15
 Time 0930

Monitoring Well Record for Low-Flow Purging
 (Form SP-09)

Project Data:

Project Name: BNIA Quarterly Post Closure
 Ref. No.: 18036-2014

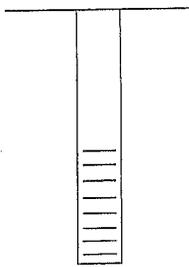
Date: 12/10/15
 Personnel: D. Tyren

C of C #
48965

Monitoring Well Data:

Well No.: MW-30
 Vapour PID (ppm): _____
 Measurement Point: _____
 Constructed Well Depth (m/ft): _____
 Measured Well Depth (m/ft): _____
 Depth of Sediment (m/ft): _____

Saturated Screen Length (m/ft): _____
 Depth to Pump Intake (m/ft)⁽¹⁾: _____
 Well Diameter, D (cm/in): _____
 Well Screen Volume, V_s (L)⁽²⁾: _____
 Initial Depth to Water (m/ft): 5.79



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required:				±3 %	±0.005 or 0.01 ⁽⁵⁾	±10 %	±10 %	±0.1 Units	±10 mV		
0909	80	6.43	0.69	11.8	0.80	9	0.95	7.66	-182.7		
0914	136	7.18	1.44	12.6	0.81	4	0.41	7.56	-194.9		
0919	108	7.88	2.14	12.5	0.82	4	0.38	7.55	-200.4		
0924		8.58	2.84	12.4	0.82	3.16	0.36	7.54	-204.1		
0929											

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p / V_s .
- For conductivity, the average value of three readings < 1 mS/cm ± 0.005 mS/cm or where conductivity > 1 mS/cm ± 0.01 mS/cm.

Inst. Control #15
 w/L Meter NFO6117
 YSI Meter NFO7602
 Turb NFO5042

Start Purge @ 0904

Dae Tyren

Sample ID WG-18036-121015-DT-009
 Blood Dup WG-18036-121015-DT-009
 Time 1150

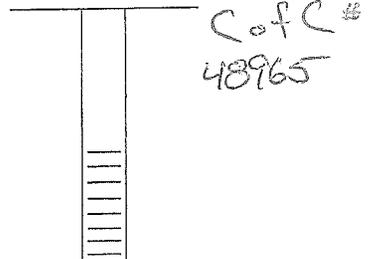
DUP

Monitoring Well Record for Low-Flow Purging
 (Form SP-09)

Project Data:

Project Name: BNIA Post Closure
 Ref. No.: 18036-2014

Date: 12/10/15
 Personnel: D. Tyson



Monitoring Well Data:

Well No.: MW-32
 Vapour PID (ppm): _____
 Measurement Point: _____
 Constructed Well Depth (m/ft): _____
 Measured Well Depth (m/ft): _____
 Depth of Sediment (m/ft): _____

Saturated Screen Length (m/ft): _____
 Depth to Pump Intake (m/ft)⁽¹⁾: _____
 Well Diameter, D (cm/in): _____
 Well Screen Volume, V_s (L)⁽²⁾: _____
 Initial Depth to Water (m/ft): 1.37

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required:				±3 %	±0.005 or 0.01 ⁽⁵⁾	±10 %	±10 %	±0.1 Units	±10 mV		
1109	100	2.37	1.00	12.1	1.50	21.5	0.55	7.78	-189.8		
1114	100	3.00	1.63	12.2	1.43	22.6	0.23	7.71	-220.7		
1119		3.51	2.14	12.3	1.31	4.96	0.25	7.69	-229.5		
1124		3.81	2.44	12.2	1.23	2.64	0.23	7.70	-237.2		
1129	104	4.19	2.82	12.2	1.12	6.15	0.22	7.74	-244.1		
1134		4.48	3.11	12.3	0.99	4.42	0.22	7.77	-234.2		
1139	100	4.69	3.32	12.3	0.86	4.75	0.22	7.77	-217.6		
1144		4.92	3.55	12.4	0.85	5.79	0.21	7.77	-207.2		
1149				12.5	0.84	3.73	0.20	7.77	-199.0		

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .
- For conductivity, the average value of three readings < 1 mS/cm ± 0.005 mS/cm or where conductivity > 1 mS/cm ± 0.01 mS/cm.

Inst. Control #15
 YSI NF07602
 Turb NF05042
 w/L Meter NF06117

Start Purge @ 1102

BNIA Quarterly Post
Closure Monitoring

March 17, 2016

Project # 18036-2014
Field File



Tailgate Safety Meeting Form

Small Group Format - Multiple Days

Date:	3/17/16	Time:		Project No.:	18036-2014
Presenter:	S GARDNER	Project Name:	BNIA QUARTERLY SAMPLING		

Safety topics/items discussed:

PROPER PPE FOR TASK
TRAFFIC - HEAVY AT TIMES BE AWARE OF YOUR SURROUNDINGS
PINCH POINTS - OPENING/CLOSING WELL LIDS/ MH COVERS
UNEVEN SURFACES - WATCH YOUR FOOTING

Print Name	Signature	Company
SHAWN GARDNER	<i>Shawn Gardner</i>	GHD
DAVID TYRAN	<i>David Tyrant</i>	GHD
Doug Oscar	<i>Doug Oscar</i>	GHD
Kevin Lynch	<i>Kevin Lynch</i>	GHD
DOUG OSCAR	<i>Doug Oscar</i>	GHD

Date:		Time:		Project No.:	
Presenter:		Project Name:			

Safety topics/items discussed:

Print Name	Signature	Company

Date:		Time:		Project No.:	
Presenter:		Project Name:			

Safety topics/items discussed:

Print Name	Signature	Company

Groundwater Sampling Equipment and Supply Checklist
(Form SP-05)

Date: 03/16/2016
(mm/dd/yyyy)

Reference No. 18036-2014

Equipment

Required sampling equipment
(as per work plan or QAPP)

Instruments

- Water level indicator
- Thermometer *
- pH meter *
- Conductivity probe *
- Turbidity meter
- HNu/OVA/Microtip
- Air monitoring equipment

Supplies

- Gasoline can/gas
- Polypropylene rope
- Aluminum foil
- Paper towels
- pH buffer solution(s)
- Conductivity standard solution(s)
- Decontamination fluids
(as per work plan and QAPP)
- Sample jars (extra)
- Sample jar labels (GHD) materials
- Cooler(s)/ice packs/packing materials
- Trash bags
- Sample preservatives
- Plastic spray bottles
- Plastic basin or pan
- Sample filter (on line or external filter)
- Polyethylene sheeting
- First aid kit
- Personal protective equipment (as per HASP)

Documentation

- Chain of custody forms
- Well logs
- Notebook/Field book
- Photolog
- Site pass/badge
- Federal Express manifests
- Previous well logs/previous historical well data
- Site map
- Blank well data forms

Miscellaneous

- Well cap keys
- Bolt cutters
- Camera/film
- Knife
- Spare batteries for instruments
- Lock deicer (winter)
- Reinforced packing tape
- Pen/pencil/indelible marking pen
- Tool box
- Spare locks/keys
- On site transportation
(all-terrain vehicle/snowmobiles)

Completed By: David Tyran
(please print)

Date: 03/16/2016
(mm/dd/yyyy)

Project Planning Completion and Follow-Up Checklist
(Form SP-02)

Date: 03/19/2016
(mm/dd/yyyy)

Reference No. 18036-2014

Prior Planning and Coordination

- Confirm well numbers, location and accessibility
- Review of project documents, Health and Safety Plan (HASP), sampling Quality Assurance/Quality Control (QA/QC) and site-specific sampling requirements
- Historical well data; depth, pH, performance and disposition of purge water
- Site access notification and coordination
- Coordination with laboratory through GHD chemistry group
- Procurement, inventory and inspection of all equipment and supplies
- Prior equipment preparation, calibration or maintenance
- ~~NA~~ All utilities located and approved

Filed Procedure

- Instruments calibrated daily
- Sampling equipment decontaminated in accordance with the QAPP
- Field measurements and sampling details logged in appropriate field books or an appropriate field form
- Well volume calculated and specified volumes removed
- Specified samples, and QA/QC samples taken per Quality Assurance Project Plan (QAPP)
- Samples properly labeled, preserved and packed
- Sampling locations secured or completed according to work plan
- Sample date times, locations and sample numbers have all been recorded in applicable log(s)
- Samples have been properly stored if not shipped/delivered to lab same day
- Samples were shipped with complete and accurate chain of custody record

Follow-Up Activities

- Questionable measurements field verified
- Confirm all samples collected
- All equipment has been maintained and returned
- Sampling information reduced and required sample keys and field data distributed
- Chain of custody records filed
- Expendable stock supplies replaced
- GHD and client-controlled items returned (i.e., keys)
- Arrange disposal of investigation generated wastes with client
- Confirm all samples collected

Completed By: David Tyran
(please print)

Date: 03/19/2016
(mm/dd/yyyy)

Field Data Record Form
 Meter, Turbidity (Portable) Hach 2100P
 (QSF-421D)
 Page 1 of 1

Control number: X1F05041
 Date (mm/dd/yyyy): 03/17/2016
 User (print name): D. Tyrann

Project number: 18036-2014
 Project name: BNIA 1/4'ly Post Closure
 Location: Genesee Street, Cheektowaga

Additional equipment control numbers and descriptions: _____
20 NTU Lot # A5211 exp 10/2016
100 NTU Lot # A5180 exp 10/2016
800 NTU Lot # A5212 exp 11/2016

Field procedure before use:

<i>Do not calibrate in the field - in-house calibration only by field equipment manager.</i>													
	Check when completed												
Check kit contents; <ul style="list-style-type: none"> ○ Meter <input checked="" type="checkbox"/> ○ Low 0-10, medium 0-100, high 0-1000 standards <input checked="" type="checkbox"/> ○ Extra AA batteries <input checked="" type="checkbox"/> ○ Sample vials <input checked="" type="checkbox"/> 													
Test and record Gelex standards: <table style="width: 100%; margin-top: 10px;"> <thead> <tr> <th></th> <th style="text-align: center;">Gelex Standard</th> <th style="text-align: center;">Meter Reading</th> </tr> </thead> <tbody> <tr> <td>○ Low 0-10</td> <td style="text-align: center;"><u>20</u></td> <td style="text-align: center;"><u>22</u></td> </tr> <tr> <td>○ Medium 0-100</td> <td style="text-align: center;"><u>100</u></td> <td style="text-align: center;"><u>103</u></td> </tr> <tr> <td>○ High 0-1000</td> <td style="text-align: center;"><u>800</u></td> <td style="text-align: center;"><u>777</u></td> </tr> </tbody> </table>		Gelex Standard	Meter Reading	○ Low 0-10	<u>20</u>	<u>22</u>	○ Medium 0-100	<u>100</u>	<u>103</u>	○ High 0-1000	<u>800</u>	<u>777</u>	<input checked="" type="checkbox"/>
	Gelex Standard	Meter Reading											
○ Low 0-10	<u>20</u>	<u>22</u>											
○ Medium 0-100	<u>100</u>	<u>103</u>											
○ High 0-1000	<u>800</u>	<u>777</u>											
Note: Condensation on outside of sample bottles affects meter readings.													

Filing: Field file

Signature: D. Tyrann

Field Data Record Form
 Meter, Turbidity (Portable) Hach 2100P
 (QSF-421D)
 Page 1 of 1

Control number: NF05040
 Date (mm/dd/yyyy): 03/17/2016
 User (print name): S. Gardner

Project number: 18036-2014
 Project name: BNIA 1/4 Ly Post Closure
 Location: Genesee Street, Cheektowaga

Additional equipment control numbers and descriptions:

20 NTU Lot # A5211 exp 10/2016
100 NTU Lot # A5180 exp 10/2016
800 NTU Lot # A5212 exp 4/2016

Field procedure before use:

<i>Do not calibrate in the field - in-house calibration only by field equipment manager.</i>		Check when completed												
Check kit contents; <ul style="list-style-type: none"> ◦ Meter ◦ Low 0-10, medium 0-100, high 0-1000 standards ◦ Extra AA batteries ◦ Sample vials 		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>												
Test and record Gelex standards: <table style="margin-left: 40px; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding: 5px;"></th> <th style="text-align: center; padding: 5px;"><i>Gelex Standard</i></th> <th style="text-align: center; padding: 5px;"><i>Meter Reading</i></th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">◦ Low 0-10</td> <td style="text-align: center; border-bottom: 1px solid black; padding: 5px;"><u>20</u></td> <td style="text-align: center; border-bottom: 1px solid black; padding: 5px;"><u>20.5</u></td> </tr> <tr> <td style="padding: 5px;">◦ Medium 0-100</td> <td style="text-align: center; border-bottom: 1px solid black; padding: 5px;"><u>100</u></td> <td style="text-align: center; border-bottom: 1px solid black; padding: 5px;"><u>96.3</u></td> </tr> <tr> <td style="padding: 5px;">◦ High 0-1000</td> <td style="text-align: center; border-bottom: 1px solid black; padding: 5px;"><u>800</u></td> <td style="text-align: center; border-bottom: 1px solid black; padding: 5px;"><u>784</u></td> </tr> </tbody> </table>		<i>Gelex Standard</i>	<i>Meter Reading</i>	◦ Low 0-10	<u>20</u>	<u>20.5</u>	◦ Medium 0-100	<u>100</u>	<u>96.3</u>	◦ High 0-1000	<u>800</u>	<u>784</u>		<input checked="" type="checkbox"/>
	<i>Gelex Standard</i>	<i>Meter Reading</i>												
◦ Low 0-10	<u>20</u>	<u>20.5</u>												
◦ Medium 0-100	<u>100</u>	<u>96.3</u>												
◦ High 0-1000	<u>800</u>	<u>784</u>												
Note: Condensation on outside of sample bottles affects meter readings.														

Filing: Field file

Signature: 

DNIA Quarterly Post Closure Monitoring

DAILY LOG

3/17/10 YSI PRO SERIES #NF0760Z CALABRATION USING

PH 4.00 AUTO CAL LOT# C579417 EXP 7/10

PH 4.00 BEFORE 4.15 AFTER 3.99

COND 4.49 BEFORE 4.59 AFTER 4.49

DO% BAR. 736.4 93.6% READING 8.17 mg/L

0711 ONSITE SG WEATHER - CLOUDY 43°-50°F WINDS SW 10-30MPH

TAILGATE SAFETY MEETING, GET ESCORT TO TAKE ACROSS TARMAC

0745 SET UP ON MW-34 PURGE AND SAMPLE

METHOD - LOW FLOW USING MASTERFLEX PERISTALTIC PUMP

W/ DEDICATED TUBING TO WELL

0829 SET UP ON MW-35 PURGE AND SAMPLE, FIELD DUPLICATE

0950 SET UP ON MW-2 PURGE AND SAMPLE

1102 SET UP ON MW-28 PURGE AND SAMPLE

1206 SET UP ON MW-5 PURGE AND SAMPLE

1250 SET UP ON MW-31 IN ROAD WAY CONE OFF TWO

LANES PURGE AND SAMPLE

1348 SAMPLING COMPLETE

1400 OFFSITE

(5)

18036-2014

Dave T. [Signature]

18036-2014

BNIA Quarterly Post Closure Monitoring

DAILY LOG

3/16/16 Calibrate Horiba U-22 with auto cal. Solution
lot # C579417 exp 7/2016 Meter # NFO6156

	Before	After
pH (400)	4.04	3.99
Cond (449)	4.41	4.50
DO	9.04	8.75

3/17/16 0728 on-site meet NFTA Escort
0745 Setup on MW34D purge & Sample low flow
Trip Blank = TB-18036-031716-DT 2x40ml w/HCL
0850 Setup on MW30 purge & Sample low flow
0952 Setup on MW33 purge & Sample Low flow
1045 Setup on MW32 purge & Sample Low flow
1145 Meet up with SC7 finish remaining wells
1400 off-site

DST

Dave D. Fyfe

BNIA SITE QUARTERLY WATER LEVEL RECORD

DATE 3-17-16

CREW D. Tyrann S. Gardner

INSTRUMENT Nos. NFO6117, NFO6118

WELL NUMBER	GROUND ELEVATION	TOP OF CASING ELEVATION (A)	DEPTH TO WATER (B)	WATER LEVEL ELEVATION (A-B)	COMMENTS
	feet AMSL	feet AMSL	feet	feet AMSL	
MW-2	692.16	691.81	6.64	685.17	
MW-5	688.21	685.93	2.39	683.54	
MW-28	689.26	688.27	5.77	682.50	
MW-30	695.54	694.81	4.42	690.39	
MW-31	688.46	687.22	3.51	683.71	
MW-32	711.37	710.71	0.55	710.16	
MW-33	713.34	712.50	4.89	707.61	
MW-34	703.81	702.93	2.97	699.96	
MW-34D	703.23	701.79	2.40	699.39	
MW-35	698.86	698.46	12.68	685.78	

COMMENTS _____

SIGNATURE

Dave J. Tyrann

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring
 Ref. No.: 018036-2014

Date: 3-17-16
 Personnel: D. Tyren



Monitoring Well Data:

Well No.: MW-30 Well Diameter, D (inches): _____
 Measurement Point: Top of Well Riser Well Screen Volume, V_s (L)⁽²⁾: _____
 Constructed Well Depth (ft): 23.45 Initial Depth to Water (ft): 4.42
 Measured Well Depth (ft): _____ General Well Condition: Good

Sampling Data

Sample No.: WG-18036-031716-DT-003 Chain of Custody No.: 53200-050 53205
 Sample Time: 0935 Parameters: VOCs Metals
 MS/MSD or Dup _____

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH	ORP (mV)	Turbidity NTU	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Start Purge	<u>0852</u>		Precision Required:	±3%	±10%	±3%	±0.1 Units	±10 mV	±10%		
0902	80	5.72	1.30	13.53	3.94	0.96	6.26	115	10.6		
0907		6.22	1.80	12.65	1.41	1.00	6.37	107	6.81		
0912	88			12.17	0.77	1.00	6.52	102	7.00		
0917		7.22	2.80	11.90	0.60	1.03	6.62	98	5.83		
0922	88			11.73	0.50	0.99	6.72	94	5.90		
0927		8.72	3.30	11.67	0.51	1.02	6.77	91	5.85		
				11.57	0.48	1.00	6.83	89	6.84		

Comments: _____

Instrument Control Numbers

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 5-foot screen length (L). For Imperial units, $V_s = \pi \cdot (r)^2 \cdot L \cdot (2.54)^3$, where r and L are in inches.
- The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged, (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p / V_s .

Water Level Meter NF06117
 Multi-parameter meter NF06156
 Turbidimeter NF05040
 Signature Dave Tyren

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring
 Ref. No.: 018036-2014

Date: 3/17/16
 Personnel: S GARDNER



Monitoring Well Data:

Well No.: MW-2 Well Diameter, D (inches): 2"
 Measurement Point: Top of Well Riser Well Screen Volume, V_s (L)⁽²⁾: _____
 Constructed Well Depth (ft): 26.5 Initial Depth to Water (ft): 6.64
 Measured Well Depth (ft): _____ General Well Condition: GOOD

Sampling Data

Sample No.: WG-18036-031716-C08-36 Chain of Custody No.: 53205
 Sample Time: 1045 Parameters: VOCs Metals
 MS/MSD or Dup _____

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH	ORP (mV)	Turbidity NTU	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Start Purge	<u>1000</u>		Precision Required:	±3%	±10%	±3%	±0.1 Units	±10 mV	±10%		
1007	108	7.22	0.58	10.1	0.87	11.02	6.82	-77.8	4.38		
1012		7.89	1.25	10.2	0.53	11.03	6.81	-50.3	2.43		
1017	106	8.42	1.78	10.3	0.63	10.92	6.82	-23.7	1.52		
1022		9.10	2.46	10.6	1.36	10.55	6.83	-3.7	0.62		
1027		9.85	3.21	10.5	1.65	10.50	6.89	4.4	0.77		
1032	106	10.41	3.77	10.6	1.70	10.46	6.89	7.8	0.96		
1037		11.00	4.36	10.7	1.61	10.43	6.90	7.1	1.24		
1042		11.53	4.89	10.7	1.63	10.42	6.90	6.9	0.99		

Comments: _____

Instrument Control Numbers

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 5-foot screen length (L). For Imperial units, $V_s = \pi \cdot (r)^2 \cdot L \cdot (2.54)^3$, where r and L are in inches.
- The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p / V_s .

Water Level Meter: NFO6118
 Multi-parameter meter: YSI NFO7602
 Turbidimeter: NFO5041
 Signature: Shaym Gardner

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring
 Ref. No.: 018036-2014

Date: 3/17/16
 Personnel: S GARDNER D. Tyran

Monitoring Well Data:

Well No.: MW-31 Well Diameter, D (inches): 2"
 Measurement Point: Top of Well Riser Well Screen Volume, V_s (L)⁽²⁾: _____
 Constructed Well Depth (ft): 22.95 Initial Depth to Water (ft): 3.51
 Measured Well Depth (ft): _____ General Well Condition: Good

Sampling Data

Sample No.: WG-18036-031716-011-SB Chain of Custody No.: 53205
 Sample Time: 1335 Parameters: VOCs Metals
 MS/MSD or Dup _____

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH	ORP (mV)	Turbidity NTU	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Start Purge	<u>1255</u>		Precision Required:	±3%	±10%	±3%	±0.1 Units	±10 mV	±10%		
1300	48	3.79	0.28	12.1	0.96	11.76	7.69	-138.2	3.42		
1305	52	4.03	0.52	12.2	0.45	11.68	7.76	-180.7	6.57		
1310	56	4.36	0.85	12.4	0.40	11.35	7.75	-185.8	8.87		
1315	56	4.69	1.18	12.6	0.33	10.86	7.73	-183.5	6.49		
1320		4.96	1.45	12.7	0.33	10.37	7.72	-179.2	7.01		
1325	56	5.27	1.76	12.7	0.37	10.15	7.66	-177.7	4.88		
1330		5.52		12.5	0.37	10.02	7.64	-170.2	2.26		

Comments:

Instrument Control Numbers

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 5-foot screen length (L). For Imperial units, $V_s = \pi \cdot (r)^2 \cdot L \cdot (2.54)^3$, where r and L are in inches.
- The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p / V_s .

Water Level Meter NFD0117
 Multi-parameter meter YSI-NFD7602
 Turbidimeter NFD5041
 Signature Shawn Gardner

BNIA Quarterly
Post Closure Monitoring

June 23, 2016

Project # 18036-2014
Field File

DAILY LOG

4/23/10 YSI PRO SERIES # NFO7602 CALABRATION USING

PH 4.00 BEFORE 3.91 AFTER 4.00

COND 4.49 BEFORE 4.54 AFTER 4.49

DO BAR 743.3 112.3% READING 8.86

HORIBA U-22 # NFO3583 CALABRATION USING SAME AS ABOVE

PH BEFORE 4.93 AFTER 4.00

COND BEFORE 4.55 AFTER 4.49

DO BEFORE 8.61 AFTER 8.77

0713 ONSITE SG WEATHER - SUN/CLOUDS 16°F WINDS NW 5MPH

GET ESCORT FOR PASSAGE ON TARMAC

0740 SET UP ON MW-34 PURGE AND SAMPLE LOW FLOW

0851 SET UP ON MW-35 PURGE AND SAMPLE MS/MSD

1022 SET UP ON MW-2 PURGE AND SAMPLE

1118 SET UP ON MW-28 PURGE AND SAMPLE

1225 SET UP ON MW-31 PURGE AND SAMPLE

1323 SET UP ON MW-5 PURGE AND SAMPLE

1410 SAMPLING COMPLETE, CLEAN UP

1420 OFFSITE

DJT

Daniel J. Kaya

18036-2014

BNIA 1/4 Ly Past Closure

Monitoring DAILY LOG

6/23/16 Partly Sunny 60-78°F Winds ESE 8-12

0728 on-site meet Airport escort team

Drive out to first cluster

0745 setup on MW34D purge & Sample low-flow

Trip Blank = TB-18036-062316-SG

0850 Setup on MW30 purge & sample
low-flow

1010 Setup on MW33 purge & Sample low-flow

1130 Setup on MW32 purge & Sample low-flow

Duplicate taken here

1235 Help SG purge & Sample MW31

(DST)

18036-2014

David J. Tegan

Field Data Record Form
 Meter, Turbidity (Portable) Hach 2100P
 (QSF-421D)

Control number: NF05040
 Date (mm/dd/yyyy): 6/23/16
 User (print name): DJT/SG

Project number: 18036-2014
 Project name: BNIA QUARTERLY SAMPLING
 Location: BUFFALO AIRPORT

Additional equipment control numbers and descriptions:

20NTU	LOT# AS211	EXP OCT 16'
100 NTU	LOT# AS180	EXP OCT 16'
800 NTU	LOT# AS183	EXP OCT 16'

Field procedure before use:

<i>Do not calibrate in the field - in-house calibration only by field equipment manager.</i>													
	Check when completed												
<p>Check kit contents;</p> <ul style="list-style-type: none"> ◦ Meter ◦ Low 0-10, medium 0-100, high 0-1000 standards ◦ Extra AA batteries ◦ Sample vials 	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>												
<p>Test and record Gelex standards:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 30%; text-align: center;">Gelex Standard</th> <th style="width: 30%; text-align: center;">Meter Reading</th> </tr> </thead> <tbody> <tr> <td>◦ Low 0-10 ²⁰ 20</td> <td style="text-align: center;"><u>20</u></td> <td style="text-align: center;"><u>20.2</u></td> </tr> <tr> <td>◦ Medium 0-100</td> <td style="text-align: center;"><u>100</u></td> <td style="text-align: center;"><u>101</u></td> </tr> <tr> <td>◦ High 0-1000</td> <td style="text-align: center;"><u>800</u></td> <td style="text-align: center;"><u>781</u></td> </tr> </tbody> </table>		Gelex Standard	Meter Reading	◦ Low 0-10 ²⁰ 20	<u>20</u>	<u>20.2</u>	◦ Medium 0-100	<u>100</u>	<u>101</u>	◦ High 0-1000	<u>800</u>	<u>781</u>	<input checked="" type="checkbox"/>
	Gelex Standard	Meter Reading											
◦ Low 0-10 ²⁰ 20	<u>20</u>	<u>20.2</u>											
◦ Medium 0-100	<u>100</u>	<u>101</u>											
◦ High 0-1000	<u>800</u>	<u>781</u>											
<p>Note: Condensation on outside of sample bottles affects meter readings.</p>													

Filing: Field file

Signature: Shawn Gardner

Field Data Record Form
 Meter, Turbidity (Portable) Hach 2100P
 (GSF-421D)

Control number: NF05041
 Date (mm/dd/yyyy): 6/23/16
 User (print name): DJT/SG

Project number: 18036-2014
 Project name: BNIA QUARTERLY SAMPLING
 Location: BUFFALO AIRPORT

Additional equipment control numbers and descriptions:

20NTU LOT# AS211 EXP OCT 16'
100NTU LOT# AS180 EXP OCT 16'
800NTU LOT# AS183 EXP OCT 16'

Field procedure before use:

<i>Do not calibrate in the field - in-house calibration only by field equipment manager.</i>			Check when completed
Check kit contents;			<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> ◦ Meter ◦ Low 0-10, medium 0-100, high 0-1000 standards ◦ Extra AA batteries ◦ Sample vials 			
Test and record Gelex standards:			
<ul style="list-style-type: none"> ◦ Low 0-10²⁰ ◦ Medium 0-100 ◦ High 0-1000 	Gelex Standard <u>20</u> <u>100</u> <u>800</u>	Meter Reading <u>21.1</u> <u>103</u> <u>789</u>	
Note: Condensation on outside of sample bottles affects meter readings.			

Filing: Field file

Signature: Shawn Gardner

BNIA SITE QUARTERLY WATER LEVEL RECORD

DATE 6/23/16

CREW S. Gardner D. Tyran

INSTRUMENT Nos. NFOG118 NFOG117

WELL NUMBER	GROUND ELEVATION feet AMSL	TOP OF CASING ELEVATION (A) feet AMSL	DEPTH TO WATER (B) feet	WATER LEVEL ELEVATION (A-B) feet AMSL	COMMENTS
MW-2	692.16	691.81	7.40	684.41	
MW-5	688.21	685.93	3.52	682.41	
MW-28	689.26	688.27	5.94	682.33	
MW-30	695.54	694.81	6.53	688.28	
MW-31	688.46	687.22	2.71	684.51	
MW-32	711.37	710.71	0.93	709.78	
MW-33	713.34	712.50	5.31	707.19	
MW-34	703.81	702.93	3.90	699.03	
MW-34D	703.23	701.79	3.11	698.68	
MW-35	698.86	698.46	13.81	684.65	

COMMENTS

SIGNATURE

Dave Tyran

MONITORING WELL RECORD FOR LOW-FLOW PURGING

MS/MSD

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring
 Ref. No.: 018036-2014

Date: 6/23/14
 Personnel: SG

Monitoring Well Data:

Well No.: MW-35
 Measurement Point: Top of Well Riser
 Constructed Well Depth (ft): 30.3
 Measured Well Depth (ft): _____

Well Diameter, D (inches): 2
 Well Screen Volume, V_s (L)⁽²⁾: _____
 Initial Depth to Water (ft): 13.81
 General Well Condition: Good

Sampling Data

Sample No.: WG-18036-062314-S6-004
 Sample Time: 0935
 MS/MSD or Dup: MS/MSD

Chain of Custody No.: 55704
 Parameters: VOCs Metals

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH	ORP (mV)	Turbidity NTU	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Start Purge	<u>0858</u>			±3 %	±10 %	±3 %	±0.1 Units	±10 mV	±10 %		
<u>0905</u>	<u>100</u>	<u>14.51</u>	<u>0.70</u>	<u>14.2</u>	<u>1.06</u>	<u>0.598</u>	<u>7.79</u>	<u>322.8</u>	<u>1.25</u>		
<u>0910</u>	<u>100</u>	<u>14.88</u>	<u>1.07</u>	<u>14.6</u>	<u>0.66</u>	<u>0.596</u>	<u>7.77</u>	<u>329.8</u>	<u>0.76</u>		
<u>0915</u>		<u>15.30</u>	<u>1.49</u>	<u>14.5</u>	<u>0.56</u>	<u>0.592</u>	<u>7.74</u>	<u>233.8</u>	<u>1.54</u>		
<u>0920</u>		<u>15.66</u>		<u>14.4</u>	<u>0.51</u>	<u>0.593</u>	<u>7.74</u>	<u>257.1</u>	<u>0.51</u>		
<u>0925</u>	<u>100</u>	<u>16.01</u>		<u>14.5</u>	<u>0.50</u>	<u>0.591</u>	<u>7.73</u>	<u>272.3</u>	<u>1.02</u>		
<u>0930</u>		<u>16.31</u>		<u>14.6</u>	<u>0.50</u>	<u>0.594</u>	<u>7.72</u>	<u>273.6</u>	<u>0.76</u>		

Comments:

Instrument Control Numbers

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 5-foot screen length (L). For Imperial units, $V_s = \pi(r)^2 L (2.54)^3$, where r and L are in inches.
- (3) The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p / V_s .

Water Level Meter NF0611B
 Multi-parameter meter YSI NF07602
 Turbidimeter NF0504L
 Signature [Signature]

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring

Date: 6-23-16

Ref. No.: 018036-2014

Personnel: D. Tyran

Monitoring Well Data:

Well No.: MW-34 D

Well Diameter, D (inches): 4 inch

Measurement Point: Top of Well Riser

Well Screen Volume, V_s (L)⁽²⁾: _____

Constructed Well Depth (ft): 34.34

Initial Depth to Water (ft): 3.11

Measured Well Depth (ft): _____

General Well Condition: _____

Sampling Data

Sample No.: WG-18036-062316-SG-001

Chain of Custody No.: 55704

Sample Time: 0840

Parameters: VOCs Metals

MS/MSD or Dup _____

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH	ORP (mV)	Turbidity NTU	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Start Purge	<u>0758</u>		Precision Required:	±3%	±10%	±3%	±0.1 Units	±10 mV	±10%		
<u>0808</u>	<u>88</u>	<u>3.53</u>	<u>0.42</u>	<u>18.85</u>	<u>0.00</u>	<u>0.167</u>	<u>7.88</u>	<u>-331</u>	<u>40.1</u>		
<u>0813</u>		<u>3.72</u>	<u>0.61</u>	<u>18.71</u>	<u>0.00</u>	<u>0.160</u>	<u>7.82</u>	<u>-344</u>	<u>18.3</u>		
<u>0818</u>	<u>88</u>			<u>18.54</u>	<u>0.00</u>	<u>0.159</u>	<u>7.83</u>	<u>-352</u>	<u>14.0</u>		
<u>0823</u>				<u>18.11</u>	<u>0.00</u>	<u>0.157</u>	<u>8.00</u>	<u>-355</u>	<u>11.4</u>		
<u>0828</u>	<u>88</u>	<u>4.29</u>	<u>1.18</u>	<u>18.03</u>	<u>0.00</u>	<u>0.155</u>	<u>8.06</u>	<u>-357</u>	<u>8.70</u>		
<u>0833</u>		<u>4.41</u>	<u>1.30</u>	<u>18.09</u>	<u>0.00</u>	<u>0.155</u>	<u>8.10</u>	<u>-357</u>	<u>7.98</u>		

Comments: _____

Instrument Control Numbers

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom. Water Level Meter NFO6117

(2) The well screen volume will be based on a 5-foot screen length (L). For Imperial units, $V_s = \pi(r)^2 L * (2.54)^3$, where r and L are in inches. Multi-parameter meter NFO3583

(3) The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min. Turbidimeter NFO5040

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p/V_s. Signature Dave J Tyran

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring
 Ref. No.: 018036-2014

Date: 6-23-16
 Personnel: D. Tylan

Monitoring Well Data:

Well No.: MW-33 Well Diameter, D (inches): 2
 Measurement Point: Top of Well Riser Well Screen Volume, V_s (L)⁽²⁾: _____
 Constructed Well Depth (ft): 24.9 Initial Depth to Water (ft): 51.31
 Measured Well Depth (ft): _____ General Well Condition: _____

Sampling Data

Sample No.: WG-18036-062316-SG-C05 Chain of Custody No.: 55704
 Sample Time: 1105 Parameters: VOCs Metals
 MS/MSD or Dup _____

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH	ORP (mV)	Turbidity NTU	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Start Purge	<u>1018</u>		Precision Required:	±3%	±10%	±3%	±0.1 Units	±10 mV	±10%		
1024	80	6.15	0.84	19.78	2.07	1.62	7.10	-47	5.67		
1029	80	6.66	1.35	19.83	0.47	1.64	7.16	-51	3.28		
1034				19.35	1.70	1.60	7.18	-52	1.56		
1039	80	7.47	2.16	19.30	1.55	1.68	7.21	-53	5.65		
1044		8.03	2.72	19.18	1.03	1.82	7.19	-53	4.34		
1049	80			19.50	0.00	2.03	7.22	-53	3.40		
1054		8.73		19.30	0.00	2.10	7.23	-53	0.78		
1059				19.50	0.00	2.07	7.23	-52	2.24		

Comments: _____

Instrument Control Numbers

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 5-foot screen length (L). For Imperial units, $V_s = \pi(r^2)L \cdot (2.54)^3$, where r and L are in inches.
- The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p/V_s .

Water Level Meter NF06117
 Multi-parameter meter NF03583
 Turbidimeter NF05240
 Signature Dar J Tylan

MONITORING WELL RECORD FOR LOW-FLOW PURGING

DUP

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring
 Ref. No.: 018036-2014

Date: 6/23/16
 Personnel: D. Tyrann

Monitoring Well Data:

Well No.: MW-32 Well Diameter, D (inches): 2
 Measurement Point: Top of Well Riser Well Screen Volume, V_s (L)⁽²⁾:
 Constructed Well Depth (ft): 24.41 Initial Depth to Water (ft): 0.93
 Measured Well Depth (ft): General Well Condition:

Sampling Data

Sample No.: WG-18036-062316-SG-009 Chain of Custody No.: 55704
 Sample Time: 1205 Parameters: VOCs Metals
 MS/MSD of Dup WG-18036-062316-SG-009

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH	ORP (mV)	Turbidity NTU	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Start Purge	<u>1136</u>										
<u>1142</u>	<u>104</u>	<u>2.31</u>	<u>1.38</u>	<u>19.29</u>	<u>0.84</u>	<u>2.85</u>	<u>8.36</u>	<u>-225</u>	<u>7.87</u>		
<u>1147</u>		<u>2.96</u>	<u>2.03</u>	<u>19.21</u>	<u>0.00</u>	<u>2.56</u>	<u>8.40</u>	<u>-242</u>	<u>10.1</u>		
<u>1152</u>	<u>112</u>	<u>3.63</u>	<u>2.70</u>	<u>18.41</u>	<u>0.00</u>	<u>2.45</u>	<u>8.46</u>	<u>-255</u>	<u>3.69</u>		
<u>1157</u>				<u>19.23</u>	<u>0.00</u>	<u>2.32</u>	<u>8.37</u>	<u>-257</u>	<u>8.31</u>		
<u>1202</u>	<u>112</u>			<u>18.22</u>	<u>0.00</u>	<u>2.38</u>	<u>8.33</u>	<u>-254</u>	<u>1.83</u>		

Comments:

Instrument Control Numbers

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 5-foot screen length (L). For Imperial units, $V_s = \pi(r^2)L(2.54)^3$, where r and L are in inches.
- (3) The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p/V_s .

Water Level Meter NFO6117
 Multi-parameter meter NFO3583
 Turbidimeter NFO5040
 Signature Dave Tyrann



Tailgate Safety Meeting Form

Small Group Format - Multiple Days

Date:	6-23-16	Time:	0809	Project No.:	18036-2014
Presenter:	D. Tylan	Project Name:	BNIA 1/4'ly Post Closure Monitoring		

Safety topics/items discussed:

Most sample locations are in moderate to high traffic areas
 Use truck and cones to delineate a large area around your
 sample zone. Flag man will be necessary @ one location
 Practice star

Print Name	Signature	Company
David Tylan	<i>David Tylan</i>	GHD
Shawn Gardner	<i>Shawn Gardner</i>	GHD
Kevin Lynch	<i>K. Lynch</i>	GHD

Date:		Time:		Project No.:	
Presenter:		Project Name:			

Safety topics/items discussed:

Print Name	Signature	Company

Date:		Time:		Project No.:	
Presenter:		Project Name:			

Safety topics/items discussed:

Print Name	Signature	Company

BNIA Quarterly Post
Closure Monitoring
September 20, 2016

Project # 18036-2014
Field File

Field Data Record Form
 Meter, Turbidity (Portable) Hach 2100P
 (QSF-421D)
 Page 1 of 1

Control number: NFO5041
 Date (mm/dd/yyyy): 09/20/2016
 User (print name): S. Gardner

Project number: 18036-2014
 Project name: BN114 Post Closure Monitoring
 Location: Buffalo Airport

Additional equipment control numbers and descriptions:

20 NTU Lot # A5211 exp 10/2016
100 NTU Lot # A5180 exp 10/2016
800 NTU Lot # A5183 exp 10/2016

Field procedure before use:

<i>Do not calibrate in the field - in-house calibration only by field equipment manager.</i>		Check when completed												
Check kit contents; <ul style="list-style-type: none"> ◦ Meter ◦ Low 0-10, medium 0-100, high 0-1000 standards ◦ Extra AA batteries ◦ Sample vials 		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>												
Test and record Gelex standards: <table style="width: 100%; margin-top: 10px;"> <thead> <tr> <th style="width: 30%;"></th> <th style="text-align: center; border-bottom: 1px solid black;">Gelex Standard</th> <th style="text-align: center; border-bottom: 1px solid black;">Meter Reading</th> </tr> </thead> <tbody> <tr> <td>◦ Low 0-10</td> <td style="text-align: center; border-bottom: 1px solid black;">20</td> <td style="text-align: center; border-bottom: 1px solid black;">22.0</td> </tr> <tr> <td>◦ Medium 0-100</td> <td style="text-align: center; border-bottom: 1px solid black;">100</td> <td style="text-align: center; border-bottom: 1px solid black;">104.0</td> </tr> <tr> <td>◦ High 0-1000</td> <td style="text-align: center; border-bottom: 1px solid black;">800</td> <td style="text-align: center; border-bottom: 1px solid black;">789</td> </tr> </tbody> </table>			Gelex Standard	Meter Reading	◦ Low 0-10	20	22.0	◦ Medium 0-100	100	104.0	◦ High 0-1000	800	789	<input checked="" type="checkbox"/>
	Gelex Standard	Meter Reading												
◦ Low 0-10	20	22.0												
◦ Medium 0-100	100	104.0												
◦ High 0-1000	800	789												
Note: Condensation on outside of sample bottles affects meter readings.														

Filing: Field file

Signature: Dave J. Egan

Field Data Record Form
 Meter, Turbidity (Portable) Hach 2100P
 (QSF-421D)
 Page 1 of 1

Control number: NFO5039
 Date (mm/dd/yyyy): 09/20/2016
 User (print name): D. Tyrone

Project number: 18036 - 2014
 Project name: BNIA Bat Closure Monitoring
 Location: Buffalo Airport

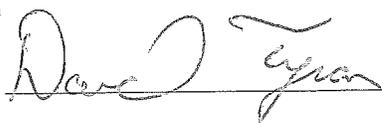
Additional equipment control numbers and descriptions:

20 NTU Lot# A5211 exp 10/2016
100 NTU Lot# A5180 exp 10/2016
800 NTU Lot# A5183 exp 10/2016

Field procedure before use:

<i>Do not calibrate in the field - in-house calibration only by field equipment manager.</i>		Check when completed												
Check kit contents; <ul style="list-style-type: none"> o Meter o Low 0-10, medium 0-100, high 0-1000 standards o Extra AA batteries o Sample vials 		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>												
Test and record Gelex standards: <table style="margin-left: 40px; margin-top: 10px;"> <thead> <tr> <th></th> <th style="text-align: center;"><i>Gelex Standard</i></th> <th style="text-align: center;"><i>Meter Reading</i></th> </tr> </thead> <tbody> <tr> <td>o Low 0-10</td> <td style="text-align: center;"><u>20</u></td> <td style="text-align: center;"><u>21.7</u></td> </tr> <tr> <td>o Medium 0-100</td> <td style="text-align: center;"><u>100</u></td> <td style="text-align: center;"><u>99.8</u></td> </tr> <tr> <td>o High 0-1000</td> <td style="text-align: center;"><u>800</u></td> <td style="text-align: center;"><u>795</u></td> </tr> </tbody> </table>		<i>Gelex Standard</i>	<i>Meter Reading</i>	o Low 0-10	<u>20</u>	<u>21.7</u>	o Medium 0-100	<u>100</u>	<u>99.8</u>	o High 0-1000	<u>800</u>	<u>795</u>		<input checked="" type="checkbox"/>
	<i>Gelex Standard</i>	<i>Meter Reading</i>												
o Low 0-10	<u>20</u>	<u>21.7</u>												
o Medium 0-100	<u>100</u>	<u>99.8</u>												
o High 0-1000	<u>800</u>	<u>795</u>												
Note: Condensation on outside of sample bottles affects meter readings.														

Filing: Field file

Signature: 

18036-2014

BNIA Post Closure Monitoring

DAILY LOG

9/20/16 Calibrate Horiba U-22 control # NFO6155 with
auto cal solution Lot# C688427 exp 6/2017

	Before	After
pH 4.00	4.06	4.00
Cond 449	4.41	4.49
DO	7.23	8.14

0808 on-site DT, SG, KL meet escort head out
to sample locations in the secure area

0823 Setup on MW-34D purge & Sample low-flow

Trip Blank = TB-18036-092016-SG 2x40ml w/HCl

0925 Setup on MW-30 purge & Sample low-flow

1045 Setup on MW-33 purge & Sample low-flow

1145 Setup on MW-32 purge & Sample low-flow

1300 Setup on MW-5 purge & Sample low-flow

1518 off-site

(DST)

D. J. Ryan

18036-2014

BNIA Post Closure Monitoring

DAILY LOG

9/20/16 Calibrate YSI meter control # NF07602
with auto cal solution lot# C688427 exp 6/2017

	Before	Aft.
pH 4.00	3.86	4.00
Cond 4.49	4.47	4.49
DO (Bar 7470)	95.8%	98.2%

0805 ONSITE SG WEATHER - SUNNY 1.8-75°F WINDS SW 5-10MPH

TAILGATE SAFETY MEETING, ESCORT FOR TARMAC

0821 SET UP ON WELL MW-34 PURGE AND SAMPLE (LOW FLOW)

0916 SET UP ON WELL MW-35 PURGE AND SAMPLE

1045 SET UP ON WELL MW-2 PURGE AND SAMPLE

1202 SET UP ON WELL MW-28 PURGE AND SAMPLE

1405 SET UP ON WELL MW-31 PURGE AND SAMPLE

1518 OFFSITE

9/20/16

Shawn Vandiver

BNIA SITE QUARTERLY WATER LEVEL RECORD

DATE 9/20/16

CREW D. Tyrann S. Gardner

INSTRUMENT Nos. NFOG117 NFOG118

WELL NUMBER	GROUND ELEVATION	TOP OF CASING ELEVATION (A)	DEPTH TO WATER (B)	WATER LEVEL ELEVATION (A-B)	COMMENTS
	feet AMSL	feet AMSL	feet	feet AMSL	
MW-2	692.16	691.81	6.70	685.11	
MW-5	688.21	685.93	2.38	683.55	
MW-28	689.26	688.27	5.83	682.44	
MW-30	695.54	694.81	0.78	694.03	
MW-31	688.46	687.22	3.59	683.63	
MW-32	711.37	710.71	0.90	709.81	
MW-33	713.34	712.50	5.11	707.39	
MW-34	703.81	702.93	3.36	699.57	
MW-34D	703.23	701.79	2.11	699.68	
MW-35	698.86	698.46	14.81	683.65	

COMMENTS _____

SIGNATURE _____

Dave Tyrann

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring
 Ref. No.: 018036-2014

Date: 9-20-16
 Personnel: D. Tyson

Monitoring Well Data:

Well No.: MW-30-33 Well Diameter, D (inches): 2
 Measurement Point: Top of Well Riser Well Screen Volume, V_s (L)⁽²⁾: _____
 Constructed Well Depth (ft): 23.45 24.9 Initial Depth to Water (ft): 5.11
 Measured Well Depth (ft): _____ General Well Condition: Good

Sampling Data

Sample No.: WG-18036-092016-S6-065 Chain of Custody No.: 55708
 Sample Time: 1115 Parameters: VOCs Metals
 MS/MSD or Dup _____

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH	ORP (mV)	Turbidity NTU	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Start Purge	<u>1053</u>		Precision Required:	±3 %	±10 %	±3 %	±0.1 Units	±10 mV	±10 %		
<u>1059</u>	<u>68</u>	<u>5.93</u>	<u>0.82</u>	<u>23.29</u>	<u>4.17</u>	<u>1.42</u>	<u>7.49</u>	<u>68</u>	<u>2.49</u>		
<u>1104</u>		<u>6.29</u>	<u>1.18</u>	<u>23.55</u>	<u>3.73</u>	<u>1.42</u>	<u>7.55</u>	<u>41</u>	<u>2.21</u>		
<u>1109</u>	<u>60</u>	<u>6.63</u>	<u>1.52</u>	<u>23.96</u>	<u>3.34</u>	<u>1.42</u>	<u>7.57</u>	<u>32</u>	<u>2.75</u>		
<u>1114</u>		<u>7.02</u>	<u>1.91</u>	<u>24.06</u>	<u>3.22</u>	<u>1.42</u>	<u>7.60</u>	<u>24</u>	<u>2.86</u>		

Comments: _____

Instrument Control Numbers

- Notes:
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.
 - (2) The well screen volume will be based on a 5-foot screen length (L). For imperial units, $V_s = \pi(r)^2 L (2.54)$, where r and L are in inches.
 - (3) The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min.
 - (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p/V_s.

Water Level Meter NF-06117
 Multi-parameter meter NF06155
 Turbidimeter NF05039

Dad Tyson

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring Date: 9/20/16
 Ref. No.: 018036-2014 Personnel: D. Tyrann

Monitoring Well Data:

Well No.: MW-32 Well Diameter, D (inches): 2
 Measurement Point: Top of Well Riser Well Screen Volume, V_s (L)⁽²⁾: _____
 Constructed Well Depth (ft): 24.41 Initial Depth to Water (ft): 0.90
 Measured Well Depth (ft): _____ General Well Condition: Good

Sampling Data

Sample No.: WG-18036-092016-SG-007 Chain of Custody No.: _____
 Sample Time: 1220 Parameters: VOCs Metals
 MS/MSD or Dup: MS/MSD

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH	ORP (mV)	Turbidity NTU	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Start Purge	<u>1149</u>		Precision Required:	±3%	±10%	±3%	±0.1 Units	±10 mV	±10%		
<u>1157</u>	<u>80</u>	<u>1.91</u>	<u>1.01</u>	<u>21.58</u>	<u>4.71</u>	<u>2.20</u>	<u>7.70</u>	<u>-155</u>	<u>41.1</u>		
<u>1202</u>		<u>2.31</u>	<u>1.41</u>	<u>20.98</u>	<u>3.88</u>	<u>2.15</u>	<u>7.73</u>	<u>-170</u>	<u>22.6</u>		
<u>1207</u>	<u>72</u>	<u>2.73</u>	<u>1.83</u>	<u>21.53</u>	<u>3.40</u>	<u>2.09</u>	<u>7.69</u>	<u>-177</u>	<u>6.14</u>		
<u>1212</u>		<u>3.14</u>	<u>2.24</u>	<u>21.66</u>	<u>3.21</u>	<u>2.07</u>	<u>7.69</u>	<u>-181</u>	<u>3.76</u>		
<u>1217</u>				<u>21.81</u>	<u>3.08</u>	<u>2.06</u>	<u>7.68</u>	<u>-183</u>	<u>2.62</u>		

Comments: _____

Instrument Control Numbers

Notes: (1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom. Water Level Meter NF06117
 (2) The well screen volume will be based on a 5-root screen length (L). For imperial units, $V_s = \pi (r)^2 L (2.34)$, where r and L are in inches. Multi-parameter meter NF06155
 (3) The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min. Turbidimeter NF06039
 (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be

Dave J. Tyrann

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring Date: 9-20-16
 Ref. No.: 018036-2014 Personnel: D. Tyson

Monitoring Well Data:

Well No.: MW-33-5 Well Diameter, D (inches): 2
 Measurement Point: Top of Well Riser Well Screen Volume, V_s (L)⁽²⁾: _____
 Constructed Well Depth (ft): 24.9 Initial Depth to Water (ft): 2.38
 Measured Well Depth (ft): _____ General Well Condition: Good

Sampling Data

Sample No.: WG-18036-092016-SG-009 Chain of Custody No.: 55708
 Sample Time: 1350 Parameters: VOCs Metals
 MS/MSD or Dup _____

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level [™] (m/ft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH	ORP (mV)	Turbidity NTU	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged [™]
Start Purge	<u>1313</u>		Precision Required:	±3 %	±10 %	±3 %	±0.1 Units	±10 mV	±10 %		
<u>1320</u>	<u>80</u>	<u>3.38</u>	<u>1.00</u>	<u>24.38</u>	<u>4.41</u>	<u>1.87</u>	<u>7.71</u>	<u>-14</u>	<u>2.24</u>		
<u>1325</u>		<u>3.89</u>	<u>1.51</u>	<u>24.56</u>	<u>3.57</u>	<u>1.85</u>	<u>7.82</u>	<u>-65</u>	<u>2.22</u>		
<u>1330</u>	<u>72</u>	<u>4.38</u>	<u>2.00</u>	<u>25.05</u>	<u>3.32</u>	<u>1.84</u>	<u>7.86</u>	<u>-94</u>	<u>1.11</u>		
<u>1335</u>		<u>4.63</u>	<u>2.25</u>	<u>25.34</u>	<u>3.24</u>	<u>1.85</u>	<u>7.86</u>	<u>-104</u>	<u>1.14</u>		
<u>1340</u>	<u>64</u>	<u>4.91</u>	<u>2.53</u>	<u>25.31</u>	<u>3.23</u>	<u>1.85</u>	<u>7.88</u>	<u>-112</u>	<u>1.80</u>		

Comments: _____

Instrument Control Numbers

Notes: (1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom. Water Level Meter NF06017
 (2) The well screen volume will be based on a 3-foot screen length (L). For imperial units, $V_s = \pi(r)^2 L (2.84)$, where r and L are in inches. Multi-parameter meter NF06155
 (3) The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min. Turbidimeter NF05839
 (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be

D. Tyson

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring
 Ref. No.: 018036-2014

Date: 9/20/16
 Personnel: SG

Monitoring Well Data:

Well No.: MW-28 Well Diameter, D (inches): 2
 Measurement Point: Top of Well Riser Well Screen Volume, V_s (L)⁽²⁾: _____
 Constructed Well Depth (ft): 20.5 Initial Depth to Water (ft): 5.83
 Measured Well Depth (ft): _____ General Well Condition: Good

Sampling Data

Sample No.: WG-18036-092016-SB-010 Chain of Custody No.: 55708
 Sample Time: 1325 Parameters: VOCs Metals
 MS/MSD or Dup: NONE

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽¹⁾ (m/ft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH	ORP (mV)	Turbidity NTU	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽²⁾
Start Purge			Precision Required:	±3%	±10%	±3%	±0.1 Units	±10 mV	±10%		
1210	90	6.10	0.27								
1303	100	6.27	0.44	19.6	0.61	12.71	7.44	-63.7	1.31		
1308		6.41	0.58	19.7	0.42	12.69	7.39	-60.1	0.47		
1313	102	6.64	0.81	19.8	0.34	12.70	7.35	-68.5	1.15		
1318		6.81	0.98	19.9	0.29	12.70	7.33	-65.2	0.70		
1323	100			19.8	0.33	12.71	7.31	-61.7	0.61		

Comments: _____

Instrument Control Numbers

- Notes:
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.
 - (2) The well screen volume will be based on a 5-foot screen length (L). For imperial units, $V_s = \pi r^2 L (2.31)$, where r and L are in inches.
 - (3) The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min.
 - (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be

Water Level Meter NFO118
 Multi-parameter meter YSI NFO7602
 Turbidimeter NFO5041

Don J. [Signature]

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring
 Ref. No.: 018036-2014

Date: 9/20/16
 Personnel: SG

Monitoring Well Data:

Well No.: MW-2 Well Diameter, D (inches): 2
 Measurement Point: Top of Well Riser Well Screen Volume, V_s (L)⁽²⁾: _____
 Constructed Well Depth (ft): 26.5 Initial Depth to Water (ft): 6.70
 Measured Well Depth (ft): _____ General Well Condition: Good

Sampling Data

Sample No.: WG-18036-092016-SG-C08 Chain of Custody No.: 55708
 Sample Time: 1135 Parameters: VOCs Metals
 MS/MSD or Dup: NONE

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH	ORP (mV)	Turbidity NTU	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Start Purge	<u>1057</u>		Precision Required:	±3%	±10%	±3%	±0.1 Units	±10 mV	±10%		
<u>1102</u>	<u>102</u>	<u>7.43</u>	<u>0.73</u>	<u>19.6</u>	<u>0.64</u>	<u>12.35</u>	<u>6.95</u>	<u>-14.9</u>	<u>0.27</u>		
<u>1107</u>		<u>8.09</u>	<u>1.39</u>	<u>19.6</u>	<u>0.34</u>	<u>12.41</u>	<u>6.94</u>	<u>8.3</u>	<u>0.46</u>		
<u>1112</u>	<u>102</u>	<u>8.63</u>	<u>1.93</u>	<u>19.8</u>	<u>0.31</u>	<u>12.38</u>	<u>6.94</u>	<u>24.3</u>	<u>0.58</u>		
<u>1117</u>		<u>9.11</u>	<u>2.41</u>	<u>20.0</u>	<u>0.29</u>	<u>12.37</u>	<u>6.94</u>	<u>34.2</u>	<u>0.75</u>		
<u>1122</u>	<u>102</u>	<u>9.51</u>	<u>2.81</u>	<u>20.1</u>	<u>0.30</u>	<u>12.30</u>	<u>6.93</u>	<u>53.7</u>	<u>0.52</u>		
<u>1127</u>		<u>9.99</u>	<u>3.29</u>	<u>20.2</u>	<u>0.28</u>	<u>12.22</u>	<u>6.93</u>	<u>68.5</u>	<u>0.20</u>		
<u>1132</u>		<u>10.30</u>	<u>3.60</u>	<u>20.4</u>	<u>0.30</u>	<u>12.19</u>	<u>6.92</u>	<u>66.2</u>	<u>0.47</u>		

Comments: _____

Instrument Control Numbers

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 5-root screen length (L). For imperial units, $V_s = \pi(r)^2 L (2.54)$, where r and L are in inches.
- The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be

Water Level Meter NF06118
 Multi-parameter meter YSI NF07602
 Turbidimeter NF05041

David J. Tyler

MONITORING WELL RECORD FOR LOW-FLOW PURGING

DLIP

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring

Date: 9/20/16

Ref. No.: 018036-2014

Personnel: SG

Monitoring Well Data:

Well No.: MW-35

Well Diameter, D (inches): 2

Measurement Point: Top of Well Riser

Well Screen Volume, V_s (L)⁽²⁾: _____

Constructed Well Depth (ft): 30.3

Initial Depth to Water (ft): 14.81

Measured Well Depth (ft): _____

General Well Condition: Good



Sampling Data

Sample No.: WG-18036-092016-SG-06A

Chain of Custody No.: 55708

Sample Time: 1000

Parameters: VOCs Metals

MS/MSD or Dup BLIND DUPLICATE - WG-18036-092016-SG-006 TIME 1000

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH	ORP (mV)	Turbidity NTU	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Start Purge	<u>0924</u>										
<u>0933</u>	<u>96</u>	<u>15.63</u>	<u>0.82</u>	<u>16.5</u>	<u>0.72</u>	<u>0.71</u>	<u>7.81</u>	<u>16.2</u>	<u>1.35</u>		
<u>0938</u>	<u>104</u>	<u>16.02</u>	<u>1.21</u>	<u>16.7</u>	<u>0.47</u>	<u>0.70</u>	<u>7.74</u>	<u>14.8</u>	<u>6.10</u>		
<u>0943</u>		<u>16.30</u>	<u>1.49</u>	<u>17.2</u>	<u>0.50</u>	<u>0.70</u>	<u>7.72</u>	<u>-14.3</u>	<u>0.77</u>		
<u>0948</u>	<u>98</u>	<u>16.61</u>	<u>1.80</u>	<u>17.0</u>	<u>0.43</u>	<u>0.70</u>	<u>7.73</u>	<u>-46.6</u>	<u>0.79</u>		
<u>0953</u>		<u>16.90</u>	<u>2.09</u>	<u>17.3</u>	<u>0.47</u>	<u>0.70</u>	<u>7.74</u>	<u>-56.3</u>	<u>0.68</u>		
<u>0958</u>		<u>17.26</u>		<u>17.4</u>	<u>0.48</u>	<u>0.70</u>	<u>7.76</u>	<u>-59.7</u>	<u>0.61</u>		

Comments: _____

Instrument Control Numbers

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 2-foot screen length (L). For imperial units, $V_s = \pi \cdot r^2 \cdot L \cdot (2.31)$, where r and L are in inches.
- The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be

Water Level Meter NFO6118

Multi-parameter meter YSI NFO7602

Turbidimeter NFO5041

Dave J. Tegan

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: BNIA Quarterly Post-closure Monitoring Date: 9/20/16
 Ref. No.: 018036-2014 Personnel: SG

Monitoring Well Data:

Well No.: ~~MW-5~~ SG MW-31 Well Diameter, D (inches): 2
 Measurement Point: Top of Well Riser Well Screen Volume, V_s (L)⁽²⁾: _____
 Constructed Well Depth (ft): 23.5 Initial Depth to Water (ft): 3.59
 Measured Well Depth (ft): _____ General Well Condition: GOOD

Sampling Data

Sample No.: WG-18036-092016-06 oil Chain of Custody No.: _____
 Sample Time: 1500 Parameters: VOCs Metals
 MS/MSD or Dup: NONE

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	DO (mg/L)	Conductivity (mS/cm)	pH ±0.1 Units	ORP (mV) ±10 mV	Turbidity NTU ±10 %	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Start Purge	<u>1412</u>		Precision Required:	±3 %	±10 %	±3 %					
<u>1418</u>	<u>60</u>	<u>4.08</u>	<u>0.49</u>	<u>25.3</u>	<u>0.46</u>	<u>11.52</u>	<u>7.69</u>	<u>-157.5</u>	<u>8.28</u>		
<u>1423</u>		<u>4.40</u>	<u>0.81</u>	<u>25.4</u>	<u>0.35</u>	<u>11.15</u>	<u>7.67</u>	<u>-86.9</u>	<u>6.38</u>		
<u>1428</u>	<u>60</u>	<u>4.70</u>	<u>1.11</u>	<u>25.5</u>	<u>0.33</u>	<u>11.00</u>	<u>7.66</u>	<u>-49.7</u>	<u>5.13</u>		
<u>1433</u>		<u>5.01</u>	<u>1.42</u>	<u>25.5</u>	<u>0.34</u>	<u>10.64</u>	<u>7.62</u>	<u>-12.2</u>	<u>5.85</u>		
<u>1438</u>		<u>5.33</u>	<u>1.74</u>	<u>25.6</u>	<u>0.32</u>	<u>10.46</u>	<u>7.61</u>	<u>-2.7</u>	<u>5.70</u>		
<u>1443</u>	<u>56</u>	<u>5.62</u>	<u>2.03</u>	<u>25.5</u>	<u>0.31</u>	<u>10.30</u>	<u>7.61</u>	<u>7.2</u>	<u>5.79</u>		
<u>1448</u>	<u>54</u>	<u>5.91</u>	<u>2.32</u>	<u>25.7</u>	<u>0.30</u>	<u>10.26</u>	<u>7.62</u>	<u>-66.5</u>	<u>2.59</u>		
<u>1453</u>		<u>6.26</u>	<u>2.67</u>	<u>25.4</u>	<u>0.29</u>	<u>10.21</u>	<u>7.62</u>	<u>-61.2</u>	<u>0.64</u>		
<u>1458</u>	<u>56</u>	<u>6.51</u>		<u>25.2</u>	<u>0.28</u>	<u>10.17</u>	<u>7.60</u>	<u>-58.2</u>	<u>1.32</u>		

Comments: _____

Instrument Control Numbers

- Notes:
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom. Water Level Meter NF06118
 - (2) The well screen volume will be based on a 3-root screen length (L). For imperial units, $V_s = \pi r^2 L (2.54)$, where r and L are in inches. Multi-parameter meter YSI NF57602
 - (3) The drawdown from the initial water level should not exceed 0.3 ft. The pumping rate should not exceed 600 mL/min. Turbidimeter NF05041
 - (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be

Shawn Valentin