APPENDICES

Appendix A

Copies of May and November 2014 Field Notes

GROUNDWATER SAMPLING LOG

SITE NAME: TWP Roswell Station 9	SITE LOCATION: 6381 North Main St. Roswell, NM		
WELL NO: MW-22	SAMPLE ID: MW-22	DATE: 05/02/2014	

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER
2"	N/A	50 feet to 65 feet	58.49	1.8" Disposable

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY

= (63.75 feet – 58.49 feet) x 0.16 gallons/foot = 0.84 gallons

3 WELL VOLUMES = 2.52 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 0905	PURGING ENDED AT: 0919	TOTAL VOLUME PURGED (gallons): 2.50

TIME	VOLUME PURGED (gallons)	CUMUL VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	OXYGEN REDUCTION POTENTIAL (mV)	COLOR (describe)	ODOR (describe)
0905	Initial 0.25	0.25	0.25	58.49	7.24	18.5	3390	3.98	38.5	Tan Tube Dirty	None
0910	1.0	1.0	0.25	–	7.08	19.0	3419	4.21	39.2	Tan Tube Dirty	None
0912	1.5	1.5	0.25	–	7.04	18.9	3384	4.25	41.7	Tan Tube Dirty	None
0915	2.0	2.0	0.25	–	7.04	18.8	3388	3.97	44.2	Tan Tube Dirty	None
0918	2.5	2.5	0.25	–	7.01	18.8	3380	3.49	47.0	Tan Tube Dirty	None

INSTRUMENTS USED: YSI 556 MPS

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; (2" = 0.16); 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0008; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT USED: (B = Bailer) BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 0930	SAMPLING ENDED AT: 0940
Clayton Barnhill / CMB			

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-22 ~~DUP~~	3 6	CG	~~250~~ 40mL	HCL	240mL	7.01	VOC's	B	

REMARKS: Purge H2O placed in 55 gallon Drum then transferred to on-site 210 BBL Surge Tank.

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization:
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units Temperature: ≤ 10% °C Specific Conductance: ≤ 10% µS/cm Dissolved Oxygen: all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

Revision Date: October 22, 2013

GROUNDWATER SAMPLING LOG

SITE NAME: TWP Roswell Station 9	SITE LOCATION: 6381 N. Main Street Roswell, NM	
WELL NO: MW-37	SAMPLE ID: MW-37	DATE: 05/02/14

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/2	WELL SCREEN INTERVAL DEPTH: 50 feet to 70 feet	STATIC DEPTH TO WATER (feet): 59.20	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY

= (69.61' feet - 59.20' feet) X 0.16 gallons/foot = 1.6656 gallons

3 WELL VOLUMES = 4.99 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): N/A	FINAL PUMP OR TUBING DEPTH IN WELL (feet): N/A	PURGING INITIATED AT: 10:37	PURGING ENDED AT: 10:47	TOTAL VOLUME PURGED (gallons): 5.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) mg/L or % saturation	OXYGEN REDUCTION POTENTIAL (mV)	COLOR (describe)	ODOR (describe)
10:37	Initial	0	0.50	59.20	7.30	20.0	3474	0.98	93.3	Turbid Brown	None
10:39	1.0	1.0	0.50	—	7.06	19.5	3485	0.78	95.2	Brown	None
10:41	2.0	2.0	0.50	—	6.99	19.4	3486	0.78	94.6	Clear/Brown	None
10:43	3.0	3.0	0.50	—	6.97	19.4	3485	0.79	93.7	Clear	None
10:45	4.0	4.0	0.50	—	6.96	19.3	3490	0.79	92.4	Clear	None
10:47	5.0	5.0	0.50	—	6.95	19.3	3483	0.78	92.1	Clear	None

INSTRUMENTS USED: YSI 556 MPS

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 6" = 1.02; 8" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; (BP) = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION: Clayton M Barnhill / CMB	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 10:48	SAMPLING ENDED AT: 10:52
PUMP OR TUBING DEPTH IN WELL (feet): N/A	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW37	3	GG	40mL	HCL	120 mL	6.95	BTEX	BP	0.506PM

REMARKS: Purge H2O placed in 55 Gallon drum then transferred to Surge Tank

MATERIAL CODES: AG = Amber Glass; (CG) = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; (BP) = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization:
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units Temperature: ≤ 10% °C Specific Conductance: ≤ 10% µS/cm Dissolved Oxygen: all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

GROUNDWATER SAMPLING LOG

SITE NAME: TWP Roswell Station 9		SITE LOCATION: 6381 North Main Street Roswell, NM	
WELL NO: MW-35	SAMPLE ID: MW-35		DATE: 05/02/14

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/2"	WELL SCREEN INTERVAL DEPTH: 49 feet to 79 feet	STATIC DEPTH TO WATER (feet): 61.17'	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY

= (76.71' feet – 61.17' feet) X 0.16 gallons/foot = 2.48 gallons

3 WELL VOLUMES = 7.45 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 11:30	PURGING ENDED AT: 13:23	TOTAL VOLUME PURGED (gallons): 7.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	OXYGEN REDUCTION POTENTIAL (mV)	COLOR (describe)	ODOR (describe)
11:30	Initial	0	.066	61.17	7.46	20.4	3500	1.74	82.4	Turbid	None
12:00	2.0	2.0	.066	—	7.05	20.2	3650	4.02	72.6	Clear	None
12:30	4.0	4.0	.066	—	7.04	20.3	3647	4.24	66.2	Clear	None
13:00	6.0	6.0	.066	—	7.01	20.4	3646	4.24	66.3	Clear	None
13:23	7.50	7.5	.066	—	7.00	21.5	3648	4.25	66.0	Clear	None

INSTRUMENTS USED: YSI 556 MPS

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; (2" = 0.16); 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0008; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; (1/2" = 0.010); 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; (BP) = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION: Clayton M Barnhill / CMB	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 13:25	SAMPLING ENDED AT: 13:30
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW35	3	CG	40mL	HCL	120 mL	7.00	BTEX	BP	0.06 GPM

REMARKS: Purge H2O placed in 55 Gallon drum then Transferred to Surge Tank

MATERIAL CODES: AG = Amber Glass; (CG) = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization:
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units Temperature: ≤ 10% °C Specific Conductance: ≤ 10% µS/cm Dissolved Oxygen: all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

GROUNDWATER SAMPLING LOG

SITE NAME:	TWP Roswell Station 9	SITE LOCATION:	6381 N. Main Street Roswell NM
WELL NO:	MW-32	SAMPLE ID:	MW-32
DATE:	05/02/14		

PURGING DATA

WELL DIAMETER (inches):	2"	TUBING DIAMETER (inches):	½"	WELL SCREEN INTERVAL DEPTH:	60 feet to 75 feet	STATIC DEPTH TO WATER (feet):	67.41'	PURGE PUMP TYPE OR BAILER:	BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY

= (74.20 feet – 67.41' feet) x 0.16 gallons/foot = 1.08 gallons

3 WELL VOLUMES = 3.25 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 16:00	PURGING ENDED AT: 16.17	TOTAL VOLUME PURGED (gallons): 3.25

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	OXYGEN REDUCTION POTENTIAL (mV)	COLOR (describe)	ODOR (describe)
16:00	Initial	0	0.20	67.41	7.35	19.14	2982	4.90	-46.2	clear	None
16:05	1.0	1.0	0.20	—	6.89	19.7	2867	1.51	-87.2	clear	None
16:10	2.0	2.0	0.20	—	6.86	19.6	2871	1.86	-87.7	clear	None
16:17	3.25	3.25	0.20	—	6.85	19.50	2875	1.82	-52.6	clear	None

INSTRUMENTS USED: YSI 556 MPS

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; (2" = 0.16); 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; (BP = Bladder Pump); ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 16:18	SAMPLING ENDED AT: 16:20
Clayton M Barnhill/ENG			

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW32	3	CG	40mL	HCL	120 mL	6.85	BTEX	BP	0.20 Gpm

REMARKS: Purge H2O placed in 55 Gallon Drum Then Transferred to on-site Surge Tank

MATERIAL CODES: AG = Amber Glass; (CG = Clear Glass); PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; (BP = Bladder Pump); ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization:
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units Temperature: ≤ 10% °C Specific Conductance: ≤ 10% µS/cm Dissolved Oxygen: all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

GROUNDWATER SAMPLING LOG

SITE NAME: TWP Roswell Station 9	SITE LOCATION: 6381 N. Main Street Roswell NM	
WELL NO: MW-29	SAMPLE ID: MW-29	DATE: 05/02/2014

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/2"	WELL SCREEN INTERVAL DEPTH: 60 feet to 75 feet	STATIC DEPTH TO WATER (feet): 69.53	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY

= (74.45 feet − 69.53 feet) X 0.16 gallons/foot = 0.78 gallons

3 WELL VOLUMES = 2.36 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 16:40	PURGING ENDED AT: 17:15	TOTAL VOLUME PURGED (gallons): 2.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	OXYGEN REDUCTION POTENTIAL (mV)	COLOR (describe)	ODOR (describe)
16:40	Initial	0	0.10	69.53	6.95	20.2	2735	2.45	2.4	Clear	None
16:50	1.0	1.0	0.10	—	6.92	19.12	2676	2.84	−114.6	Clear	None
17:00	2.0	2.0	0.10	—	6.94	19.15	2665	2.73	−114.0	Clear	None
17:05	2.5	2.5	0.10	—	6.95	19.40	2694	2.66	−108.9	Clear	None

INSTRUMENTS USED: YSI 556 MPS

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0008; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION: Clayton M Barnhill /CMB	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 17:06	SAMPLING ENDED AT: 17:10
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW29	3	CG	40mL	HCL	120mL	6.95	BTEX	BP	

REMARKS: Purge Water placed in 55 Gallon Drum then transfered to on-site Surge Tank

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization:
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units Temperature: ≤ 10% °C Specific Conductance: ≤ 10% µS/cm Dissolved Oxygen: all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

Revision Date: October 22, 2013

GROUNDWATER SAMPLING LOG

SITE NAME: TWP Roswell Station 9	SITE LOCATION: 6361 North Main Street Roswell, NM		
WELL NO: MW-20	SAMPLE ID: MW-20	DATE: 05/04/2014	

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/2"	WELL SCREEN INTERVAL DEPTH: 46.8 feet to 61.8 feet	STATIC DEPTH TO WATER (feet): 54.28	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY

= (64 feet − 54.28 feet) X 0.16 gallons/foot = 1.55 gallons

3 WELL VOLUMES = 4.66 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 1452	PURGING ENDED AT: 15.16	TOTAL VOLUME PURGED (gallons): 4.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	OXYGEN REDUCTION POTENTIAL (mV)	COLOR (describe)	ODOR (describe)
1452	Initial	0	0.20	54.28	6.92	19.11	3174	6.60	39.3	Clear	None
1457	1.0	1.0	0.20	—	6.90	20.10	3228	6.70	36.4	Clear	None
15:02	2.0	2.0	0.20	—	6.90	20.10	3229	6.40	33.8	clear	None
15:07	3.0	3.0	0.20	—	6.89	20.86	3215	6.50	33.2	clear	None
15:12	4.0	4.0	0.20	—	6.86	20.0	3205	6.20	33.0	Clear	None
15:16	4.75	4.75	0.20	—	6.86	20.10	3201	6.20	33.1	Clear	None

INSTRUMENTS USED: YSI YSI 556 MPS

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; (2" = 0.16); 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0008; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION: Clayton McBride / KMB	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 15:17	SAMPLING ENDED AT: 15:21
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ___ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW20	6	CG	40mL	HCL	240 mL	6.86	VOC's	BP	0.206PM

REMARKS: Placed purged H2O into 55 gallon drum & pumped into on-site Surge Tank.

MATERIAL CODES: AG = Amber Glass; (CG) = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; (BP) = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization:
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units Temperature: ≤ 10% °C Specific Conductance: ≤ 10% µS/cm Dissolved Oxygen: all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

GROUNDWATER SAMPLING LOG

SITE NAME: TWP Roswell Station 9	SITE LOCATION: 6381 North Main Street Roswell, NM
WELL NO: MW-34	SAMPLE ID: MW-34
	DATE: 05/04/2014

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/2	WELL SCREEN INTERVAL DEPTH: 49 feet to 79 feet	STATIC DEPTH TO WATER (feet): 63.99	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY

= (75.75 feet − 63.99 feet) X 0.16 gallons/foot = 1.88 gallons

3 WELL VOLUMES = 5.64 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 15:40	PURGING ENDED AT: 16:14	TOTAL VOLUME PURGED (gallons) 5.25

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	OXYGEN REDUCTION POTENTIAL (mV)	COLOR (describe)	ODOR (describe)
15:40	Initial	0	0.10	63.99	7.15	20.57	3208	6.2	13.7	clear	None
15:50	1.0	1.0	0.10	—	6.90	20.30	3170	1.78	-68.3	clear	None
15:55	2.0	2.0	0.20	—	6.91	20.24	3168	1.67	-172.9	clear	None
16:00	3.0	3.0	0.20	—	6.89	20.3	3162	1.53	-174.4	clear	None
16:05	4.0	4.0	0.20	—	6.89	20.13	3159	1.41	-178.2	clear	None
16:10	5.0	5.0	0.20	—	6.89	20.20	3157	1.26	-176.0	clear	None
16:14	5.75	5.75	0.20	—	6.89	20.40	3157	1.21	-177.9	clear	None

INSTRUMENTS USED: YSI 556 MPS

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; (2") = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; (1/2" = 0.010); 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; (BP) = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION: Clayton M Barnhill / CMB	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 16:15	SAMPLING ENDED AT: 16:18
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: (Y) N MS/MSD	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW 34	3	CG	40mL	HCl	120 mL		BTEX	BP	0.20 GPM
MW 34 MSMSD	3	CG	40mL	HCl	120 mL		MS/MSD	BP	0.20 GPM

REMARKS: Purge Water placed in 55 Gallon Drum then Transfered to on-site Surge Tank

MATERIAL CODES: AG = Amber Glass; (CG) = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; (BP) Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization:
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units Temperature: ≤ 10% °C Specific Conductance: ≤ 10% µS/cm Dissolved Oxygen: all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

Revision Date: October 22, 2013

GROUNDWATER SAMPLING LOG

SITE NAME: TWP Roswell Station 9	SITE LOCATION: 6381 N. Main Street Roswell, NM	
WELL NO: MW-26	SAMPLE ID: MW-26	DATE: 05/04/2017

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/2"	WELL SCREEN INTERVAL DEPTH: 43 feet to 63 feet	STATIC DEPTH TO WATER (feet): 51.86	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY

= (65 feet – 51.86 feet) X 0.16 gallons/foot = 2.10 gallons

3 WELL VOLUMES = 6.30 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 16:38	PURGING ENDED AT: 17:05	TOTAL VOLUME PURGED (gallons): 6.50

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	OXYGEN REDUCTION POTENTIAL (mV)	COLOR (describe)	ODOR (describe)
16:38	Initial	0	0.25	51.86	7.07	19.9	3234	8.10	-82.0	Clear	None
16:42	1.0	1.0	0.25	—	6.82	19.3	3274	7.12	-38.3	Clear	None
16:46	2.0	2.0	0.25	—	6.81	19.2	3295	7.42	-27.2	Clear	None
16:50	3.0	3.0	0.25	—	6.76	19.5	3283	6.66	-2.3	Clear	None
16:54	4.0	4.0	0.25	—	6.76	19.5	3283	6.67	-1.0	Clear	None
16:58	5.0	5.0	0.25	—	6.77	19.36	3284	6.63	-0.7	Clear	None
17:02	6.0	6.0	0.25	—	6.75	19.9	3280	6.54	4.8	Clear	None
17:05	6.50	6.50	0.25	—	6.77	19.6	3280	6.53	5.8	Clear	None

INSTRUMENTS USED: YSI 556 MPS

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; (2") = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = (0.010) 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; (BP) = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION: Clayton M Barnhill CMS	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 17:05	SAMPLING ENDED AT: 17:11
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (Replaced)	DUPLICATE: (Y) N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW26	3 6	CG	40m	HCL	240	6.77	VOC'S	BP	
MW26 Duplicate	3 6	CG	40mL	HCL	240	6.77	VOC'S	BP	

REMARKS: Purge H2O placed in 55 Gallon drum then transferred to on-site Surge Tank

MATERIAL CODES: AG = Amber Glass; (CG) = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; (BP) = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization:
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units Temperature: ≤ 10% °C Specific Conductance: ≤ 10% µS/cm Dissolved Oxygen: all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

GROUNDWATER SAMPLING LOG

SITE NAME: TWP Roswell Station 9		SITE LOCATION: 6381 N. Main Street Roswell NM	
WELL NO: MW-16	SAMPLE ID: MW-16		DATE: 05/04/2014

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): N/A	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 66.20	PURGE PUMP TYPE OR BAILER: 1.5" Disposable

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY

= (71.55 feet − 66.20 feet) X 0.16 gallons/foot = 0.856 gallons

3 WELL VOLUMES = 2.56 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 17:32	PURGING ENDED AT: 17:38	TOTAL VOLUME PURGED (gallons): Dave 1.50

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	OXYGEN REDUCTION POTENTIAL (mV)	COLOR (describe)	ODOR (describe)
17:32	Initial	0	0.25	66.20	6.55	19.91	2198	2.32	-179.5	Black	Strong Petroleum
17:35	1.0	1.0	0.25	—	6.57	19.12	2166	1.34	-203.6	Black	Strong Petroleum
17:38	~~2.0~~ 1.50	2.0	0.25	Well Bailed Dry @ 17:38 hr.					1.5	Gallons	
	2.5	2.5	0.25							Purged	
				Will Let Recharge then Sample.							

INSTRUMENTS USED: YSI 556 MPS

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; (2" = 0.16); 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT USED: (B = Bailer) BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION: Clayton M Barnhill / Comp	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1750	SAMPLING ENDED AT: 1805
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced)	DUPLICATE: (Y) N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW 16	3	CG	40mL	HCL	120		BTEX	B	0.25 GPM
MW-16 Duplicate	3	CG	40mL	HCL	120		BTEX	B	0.25 GPM

REMARKS: Purge Water Placed in 55 Gallon Drum Then Transfered to on-site Surge Tank

MATERIAL CODES: AG = Amber Glass; (CG = Clear Glass); PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; (B = Bailer); BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization:
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units Temperature: ≤ 10% °C Specific Conductance: ≤ 10% µS/cm Dissolved Oxygen: all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

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Location Twp Roswell Station 9 Date 04/30/2014

Project / Client GW Monitoring 2014

Earthcon By: CMB Environmental & Geological Services Inc.

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Warm & Sunny +65°F

Arrived on site @ 0900 watched Energy Transfer 2014 General Visitor & Contractor Safety Orientation Video. Signed in for paperwork & received Card & Hardhat stickers

@ 10:05 hour Barometric Pressure- 30.31 "↑ psh/water interface measured with Solinist interface probe- serial # 656158

Time	well #	Dpsh	DTW	T.D.	Remarks
10:15	MW-3	Ø	67.31'	70.75	2" MW
10:25	MW-7	Ø	64.30'	69.59	2" MW
10:33	MW-10	Ø	69.93'	72.40	2" MW
10:45	MW-11	Ø	65.71'	68.50'	2" MW
10:50	MW-15	Ø	60.36'	—	2" MW with Bladder pump
10:54	MW-17	Ø	62.12'	—	2" MW Bladder pump
11:00	MW-24D	Ø	62.91'	—	4" Deep well 2" MW Bladder pump in well
11:10	MW-28	Ø	69.78'	—	2" MW Bladder pump in well
11:15	MW-30	Ø	66.86'	—	2" MW Bladder pump in Well
11:20	MW-33	Ø	65.05'	—	PSH in 2" MW well
16:20	MW-27	68.61'	68.65'	74.70'	

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Location Twp Roswell Station 9 Date 04/30/2014

Project / Client GW Monitoring 2014

Earthcon By: CMB Environmental & Geological Service, Inc.

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@ 14:30 hour Barometric Pressure = 30.24"

Time	well #	Dpsh	DTW	T.D.	Remarks
11:25	MW-35	Ø	61.17'	—	2" MW Bladder pump in well
11:35	MW-37	Ø	59.20'	—	2" MW Bladder pump in well
14:15	MW-40	Ø	53.78'	—	2" MW Bladder pump in well
14:22	MW-42	Ø	55.16'	—	2" MW Bladder pump in well
14:30	MW-39	Ø	50.74	—	2" MW Bladder pump in well
14:35	MW-41	Ø	56.76'	—	2" MW Bladder pump in well
14:50	MW-34	Ø	63.99'	—	2" MW Bladder pump in well
14:56	MW-32	Ø	67.41'	—	2" MW Bladder pump in well
15:01	MW-29	Ø	69.53'	Tag pump 68.5'	2" MW Bladder pump in well
15:11	MW-29	pulled	pump to	Sensor	DTW.
16:20	MW-21	Ø	65.82'	—	2" MW Bladder pump in well
16:30	MW-14	Ø	56.03'	—	2" MW Bladder pump in well
16:36	MW-26	Ø	51.86'	—	2" MW Bladder pump in well
16:43	MW-22	Ø	58.49'	63.75	2" MW
16:50	MW-20	Ø	54.28	—	2" MW Bladder pump in well
16:55	MW-13	Ø	64.91'	—	2" MW Bladder pump in well
16:05	MW-2	Ø	60.48'	61.32	2" MW
16:00	RW-1	Ø	35.48'	41.55	4" MW Stuck tape in probe
16:15	MW-16	Ø	66.20'	71.55	2" MW Hard to get
16:30	MW-12	57.57	62.68'	62.70	PSH in 2" MW
16:40	MW-18	61.50	62.73'	64.60'	PSH in 2" MW

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Location TWP Roswell Station 9 Date 04/30/2014

Project / Client GW Monitoring 2014

EarthCon By: CMB Environmental & Geological Services Inc

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Gauged all Monitor Wells on 04/30/14 @ 17:00 hour

Barometric Pressure = 30.21" →

Left Site @ 17:00 hour.

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Location TWP Roswell Station 9 Date 05/01/2014

Project / Client GW Monitoring 2014

EarthCon By: CMB Environmental & Geological Services Inc

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Arrived on-site @ 0731 hour

Cool, 35°F, Sunny. Barometric Pressure = 30.29" → Checked in @ TWP Station 9 Team OFFICE Solinst Probe

Time	Well #	DpSH	DTW	T.D.	Remarks
0748	MPE 7	Ø	68.07'	—	4" MPE Well
0753	MPE 9	Ø	68.11'	—	4" MPE well
0800	MPE 8	Ø	66.47'	—	4" MPE Well
0803	MPE 10	~~Ø~~ 66.36	66.36'	—	4" MPE well
0807	MPE 11	Ø	64.06'	—	4" MPE Well
0812	MPE 12	65.16	65.15'	—	4" MPE well
0818	MPE 13	64.15	64.45'	77.60	4" MPE Well
0825	MPE 14	64.54'	65.49'	—	4" MPE well
0831	MPE 15	Ø	63.70'	—	4" MPE Well
0837	MPE 16	65.27'	67.19'	—	4" MPE Well
0845	MPE 17	65.75	66.45'	—	4" MPE Well
0853	MPE 18	Ø	63.07'	—	4" MPE Well
0857	MPE 19	Ø	66.08'	—	4" MPE Well
0903	MPE 20	63.64'	65.23'	—	4" MPE Well
0911	MPE 21	58.32'	58.75'	—	4" MPE Well
0916	MPE 24	58.61	63.91'	—	4" MPE Well
0923	SVE 24	Ø	Ø	28.56	2" SVE well

Location TWP Roswell Station 9 Date 05/01/2014
Project / Client GW Monitoring 2014 Earthcon
By: CMB Environmental & Geological Services Inc.

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@0945 hr. Temp 53°F
Barometric Pressure = 30.28" →
@11:00 hour Barometric Pressure = 30.25" →

Time	Well #	DpSH	DTW	T.D.	Remarks
0946	MPE 29	Ø	68.68	—	4" MPE well
0950	MPE 34	Ø	66.23	—	4" MPE well
0957	MPE 30	Ø	66.97'	—	4" MPE well
10:00	SVE 30	Ø	43.35'	43.85'	2" SVE well PSH in well
10:05	MPE 31	64.62'	65.64	—	4" MPE well
10:10	SVE 31	Ø	Ø	33.05'	2" SVE well
10:15	MPE 25	Ø	68.20'	—	4" MPE well
10:18	SVE-25	Ø	32.70'	32.70'	2" SVE well PSH in well
10:28	MPE 35	60.08	60.30	—	4" MPE well
10:35	MPE 36	Ø	56.78'	—	4" MPE well pump in well
10:40	MPE 37	Ø	54.03'	—	4" MPE well pump in well
10:44	MPE 33	Ø	56.65'	—	4" MPE well pump in well
10:47	MPE 32	59.65	60.53'	—	4" MPE well pump in well
10:55	MPE-41	56.35'	62.85'	—	New 4" MPE well
11:02	MPE-38	66.14	69.0'	—	New 4" MPE well
11:07	MPE-39	60.35'	60.48'	—	New 4" MPE well
11:15	MPE 26	65.71'	65.96'	—	4" MPE well
11:20	SVE 26	Ø	Ø	32.50	2" SVE well

Location TWP Roswell Station 9 Date 05/01/14
Project / Client GW Monitoring 2014 Earthcon
By: CMB Environmental & Geological Services Inc.

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Time	Well #	DpSH	DTW	T.D.	Remarks
11:25	MPE-27	63.75'	67.31	—	4" MPE well pump in well
11:32	SVE-27	Ø	Ø	34.0	2" SVE well
11:35	MPE 28	58.32	58.48	—	2" SVE well pump in well 4" MPE well
11:40	SVE 28	Ø	Ø	34.55	2" SVE well
11:45	MPE 22	Ø	68.12'	—	4" MPE well
11:50	SVE 22	Ø	Ø	33.0	2" SVE well
11:55	MPE 23	63.41'	64.65	—	4" MPE well pump in well
12:01	SVE 23	33.78	36.80	36.80	Black PSH/oil 2" SVE well
12:10	MPE-40	61.80	62.15	—	New 4" MPE well Black oil/grease on PSH

@12:20 hour Barometric Pressure = 30.22" →
All both MPE/SVE wells Gauged on 05/01/2014

Picked up nitrogen bottle. Set up equipment for sampling. Will start sampling in AM. Left Site @ 16:40 hour.

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Location TWP Roswell/Station 9 Date 05/02/14
Project / Client GW Monitoring 2014 Earth Con
By: CMB Environmental & Geological Services, Inc. Page 7 of 9

Arrive on Site @ 1800 hour
Temp. 51°F Barometric Pressure 30.19 → Sunny, Winds SSE @ 6 mph.

Field Calibrated YSI 556 mps Serial # 05F2274AL parameter meter.

Conductivity: Coltech Conductivity Solution 1413 µs/cm @ 25°C 500 mL
Expires 11/20/2014

Initial: 1.438 ms/cm.
Final: 1.413 ms/cm

pH: 2 point Calibration: 7.0 & 4.0 pH
7.0 Solution: Coltech 500 mL
7.01 @ 25°C Expires: 08/13/2014
Initial: 7.24 pH
Final: 7.00 pH
4.0 Solution: Coltech 500 mL 4.01 @ 25°C Expires: 08/15/14
Initial: 3.83 pH
Final: 4.00 pH.

11

Location TWP Roswell Station 9 Date 05/02/14
Project / Client GW Monitoring 2014 Earth Con
By: CMB Environmental & Geological Services, Inc. Page 8 of 9

ORP: ORP Standard AuRiCal/Company 100 mVolts Vs. Ag/AgCl 500 mL
Expires: 11/27/2014

Initial: 46.3 pH mV / ORP 115.7
Final: 54.3 pH mV / ORP 99.6

Prep Tee: begin GW Sampling AFTER D.O. Calibrated

D.O.: 8.30 mg/L @ 30.19"
Initial: 8.41 mg/L
Final: 8.30 mg/L

Left Site @ 17:25

12

Location TWP Roswell Station 9 Date 05/04/13

Project / Client GW Monitoring 2014 Earthcon

By: CMB Environmental & Geological Services Inc Page 9 OF 9

Arrive on Site @ 14:00 hour.

Re-calibrate YSI 556 MPS

Serial # ~~05F~~ 05F227412

93°F, Sunny, SE winds @ 10 mph.

ORP: 100 mv vs. Ag/AgCl2

Initial: 112.6 mv ORP

Final: 100.0

Conductivity: 1413 µs/cm @ 25°C

Initial: 1.406 ms/cm

Final: 1.413 ms/cm.

PH: 2 pt. 4.0 & 7.0 pH

7.0 Initial = 6.95

Final = 7.00

4.0 Initial = 4.16

Final = 4.00

D.O.: Initial = 7.61 mg/L (Go to 8.30 mg/L)

Final: 8.29 mg/L.

Started Sampling monitor wells

Finished GW Monitoring Left Site @ 18:25

13

Location Date

Project / Client

Location Twp Roswell Station 9 Date 05/04/13
Project / Client GW Monitoring 2014 Earth Con
By: CMB Environmental & Geological Services Inc Page 9 OF 9

Arrive on site @ 14:00 hour.
Re-calibrate YSI 556 MPS
Serial # ~~05~~F05F227414C
93°F, Sunny, SE winds @ 10 mph.
ORP: 100 mv vs. Ag/AgCl2
Initial: 112.6 mv ORP
Final: 100.0
Conductivity: 1413 µs/cm @ 25°C
Initial: 1.406 ms/cm
Final: 1.413 ms/cm.

PH: 2pt. 4.0 & 7.0 pH
7.0 Initial = 6.95
Final = 7.00

4.0 Initial = 4.16
Final = 4.00

D.O: Initial = 7.61 mg/L (Goto 8.30 mg/L)
Final: 8.29 mg/L.

Started Sampling monitor wells
Finished GW monitoring Left Site @ 18:15

Location Twp Roswell Station 9 Date 05/14/13
Project / Client GW Monitoring Beneath PSH
Earth Con 2014 By: CMB Environmental & Geological Services, Inc Page 10 of 5

Arrive on-site @ 0930 Set up on MPE-13 Sunny 55°F
Barometric Pressure 30.47" Hg
Wind NW @ 6 mph
4" well
MPE-13: DPSH = 64.15
DTW = 64.45 T.D = 77.60
Began Bailing well @ 0955
3" Stainless steel Bailer 3' Length.
Placed purged PSH/H2O in 55 Gallon Drum.
@ 10:15 10 Gallons PSH/water
Purged DPSH = 0 DTW = 69.92
Sampled @ 10:20 hour
3 x 40 mL VOA's/HCL For BTEX with 3" PVC Disposable Bailer
T-P, Twine.
Gray Black H2O
Strong HC Odor.

Location TWP Roswell Station 9 Date 05/14/14
Project / Client GW Monitoring Beneath PSH
Earthcon 2014 By: CMG Environmental
& Geological Services, Inc. Page 2 of 5

MW-27: 2" SCH 40 PVC mw
DpSH = 68.61' DTW = 68.65'
T.D. = 74.70'

Began bailing well with 1.8" 3'
Stainless Steel Bailer @ 11:00 hr.
@ 10:10 hr. Bailed 1 Gallon
PSH/H2O DpSH = 0 DTW = 70.02'
Sampled @ 10:15 hr.
3x 40ml VOA's/HCl For BTEX
Gray Black H2O strong HC
odor. Used Disposable
1.8" Bailer, T-p, Twine
To sample with.
Placed purged PSH/H2O in
55 Gallon Drum.
Black H2O with strong HC
odor.
~~Sampled~~

Location TWP Roswell Station 9 Date 05/14/14
Project / Client GW Monitoring Beneath PSH
Earthcon 2014 By: CMG Environmental
& Geological Services Inc Page 3 of 5

MW-12: 2" SCH 40 PVC MW
DpSH = 57.57' DTW = 62.68'
T.D. = 62.70'

Started Bailing well with 1.8"
3' Stainless steel Bailer @
13:05 hr. @ 13:25 well
Bailed Dry to Total Depth.
Bailed 3 Gallons pure Gold
Colored to Black Pipeline
Condensate No Water. Will
let well re-charge 20 minutes
and Re-bail, Started Bailing
@ 13:45 @ 13:50 Dry -
Bailed 0.25 Gallon PSH.
Called Project Manager
will not try to sample MW-12-

16

Location TWP Roswell Station 9 Date 05/14/14

Project / Client GW Monitoring Beneath PSH

Earthcon 2014 By: CMB Environmental & Geological Services, Inc. Page 4 of 5

MW-1B: 2" sch 40 PVC MW
DpSH = 61.50' DTW = 62.73'
TD. = 64.60'

Started Bailing with 18" Stainless steel 3' Bailer. @ 14:25
1 Gallon PSH/H_2O purged.
DpSH = 64.30 DTW = 64.45
Will continue to Bail.
Re-Started @ 14:30
@ 14:32 well Bailed Dry
will let recharge. 15 minutes
@ 14:50 DpSH Ø DTW = 64.30
Went in well with 1.8" Disposable Bailer — Product/PSH in Bailer. Called Project Manager will not sample this well.

17

Location TWP Roswell Station 9 Date 05/14/14

Project / Client GW Monitoring Beneath PSH

Earthcon 2014 By: CMB Environmental & Geological Services, Inc. Page 5 of 5

MPE-31: 4" MPE Well
DpSH = 64.62' DTW = 65.64'
TD. —

Started Bailing with 3" 3' Stainless steel Bailer @ 15:10 @ 15:20 Bailed 15 Gallons of PSH/H_2O and placed in 55 gallon drum.
DpSH = Ø DTW = 73.45'

Sampled @ 15:25 3x 40mL VOA's/HCl for BTEX
Gray Black H_2O with Strong HC Odor.

Left Site @ 16:15

GROUNDWATER SAMPLING LOG

SITE NAME: TWP Roswell Station 9	SITE LOCATION: 6381 N. Main Street Roswell, NM 88201		
WELL NO: MW-16	SAMPLE ID: MW-16	DATE: 12/02/14	

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: 46.4 feet to 71.4 feet	STATIC DEPTH TO WATER (feet): 66.91	PURGE PUMP TYPE: 1.5" PVC OR (BAILER): Disposable Bailer

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY

= (71.46 feet – 66.91 feet) X 0.16 gallons/foot = 0.728 gallons

3 WELL VOLUMES = 2.18 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 10:05	PURGING ENDED AT: 10:15	TOTAL VOLUME PURGED (gallons): 2.25

TIME	VOLUME PURGED (gallons)	CUMUL VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	OXYGEN REDUCTION POTENTIAL (mV)	COLOR (describe)	ODOR (describe)
			NO	Parameters	Taken	*	PSH	*	in	well	
10:05	Started			66.91	N/A						
10:07	1.0										
10:15	2.25										

INSTRUMENTS USED:

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; (2") = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT USED: (B = Bailer); BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION: Clayton M Barnhill / CMB	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 10:16	SAMPLING ENDED AT: 10:21
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: (Y) N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-16	6	CG	40	HCl	240	N/A	BTEX	B	0.25

REMARKS:

MATERIAL CODES: AG = Amber Glass; (CG) = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; (B) = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Penstaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization:
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units **Temperature:** ≤ 10% °C **Specific Conductance:** ≤ 10% µS/cm **Dissolved Oxygen:** all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

Revision Date: October 22, 2013

GROUNDWATER SAMPLING LOG

SITE NAME: Twp Rischell Station 9	SITE LOCATION: 6381 Northmain Street Rose N MARSH
WELL NO: MW-22	SAMPLE ID: MW-22
DATE: 12/02/14	

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: 50 feet to 65 feet	STATIC DEPTH TO WATER (feet): 59.38	PURGE PUMP TYPE OR BAILER: Disposable Bailer

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY

= (68 feet – 59.38 feet) X 0.16 gallons/foot = 1.38 gallons

3 WELL VOLUMES = 4.13 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 0919	PURGING ENDED AT: 0933	TOTAL VOLUME PURGED (gallons): 4.25

TIME	VOLUME PURGED (gallons)	CUMUL VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	OXYGEN REDUCTION POTENTIAL (mV)	COLOR (describe)	ODOR (describe)
0919	Initial	0	0.25	59.38	7.21	15.31	3.782	2.85	163	Turbid	None
0924	1.0	1.0	0.25	—	7.32	16.12	3.808	2.29	14.1	Turbid	None
0929	2.0	2.0	0.25	—	7.49	16.16	3.674	2.53	9.9	Turbid	None
0929	3.0	3.0	0.25	—	7.56	16.24	3.597	2.70	7.6	Turbid	None
0933	4.25	4.25	0.25	—	7.60	15.83	3.673	2.85	6.4	Turbid	None

INSTRUMENTS USED: YSI 556 MPS Serial # 05F 2274 AL

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

3 1x Fine Filtered

SAMPLED BY (PRINT) / AFFILIATION: Clayton M. Barnhill / CMA	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 0935	SAMPLING ENDED AT: 0956
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y / N	FILTER SIZE: 45 µm
		Filtration Equipment Type:	

FIELD DECONTAMINATION: PUMP Y / N TUBING Y / N (replaced) DUPLICATE: Y / N Equipment Rinse Blank @ 0830

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW22	3	CG	40mL	HCl	120	7.60	VOC's	B	0.25

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization:
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS.
pH: ≤ 10% units **Temperature:** ≤ 10% °C **Specific Conductance:** ≤ 10% µS/cm **Dissolved Oxygen:** all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

Revision Date: October 22, 2013

GROUNDWATER SAMPLING LOG

SITE NAME: TNP Rissell Station 9		SITE LOCATION: 6381 North Main Street Rissell, NM 88329	
WELL NO.: MW-39	SAMPLE ID: MW39 MW-39		DATE: 12/01/2014

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/2"	WELL SCREEN INTERVAL DEPTH feet to feet	STATIC DEPTH TO WATER (feet): 50.69'	PURGE PUMP TYPE OR BAILER: 2" Bladder pump

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY

= (74.32' feet – 50.69' feet) X 0.16 gallons/foot = 3.78 gallons

3 WELL VOLUMES = 11.34 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 16:10	PURGING ENDED AT: 16:26	TOTAL VOLUME PURGED (gallons): 11.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm mS/cm	DISSOLVED OXYGEN (circle units) mg/l or % saturation	OXYGEN REDUCTION POTENTIAL (mV)	COLOR (describe)	ODOR (describe)
16:10	Initial	0	0.50	50.69	7.25	15.90	3.964	2.13	14.9	Clear	None
16:16	3	3	0.50	–	7.04	16.49	3.957	2.21	19.7	Clear	None
16:19	6	6	0.50	–	7.14	16.45	3.958	2.11	17.5	Clear	None
16:22	9	9	0.50	–	7.19	16.49	3.956	1.95	16.4	Clear	None
16:26	11.5	11.5	0.50	–	7.21	16.48	3.956	1.85	15.9	Clear	None

INSTRUMENTS USED: YSI 556 MPS Serial # 05F2274AL

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; (2") = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; (1/2") = 0.010; 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; (BP) = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 16:26	SAMPLING ENDED AT: 16:32
Clayton M Bamlin II / CMB			

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N)	FILTER SIZE: ____ µm
		Filtration Equipment Type:	

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: (Y) N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
MW-39	6	CG	40mL	HCL	240	7.21	VOC's	BP	0.50

REMARKS:

MATERIAL CODES: AG = Amber Glass; (CG) = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; (BP) = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization.
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units **Temperature:** ≤ 10% °C **Specific Conductance:** ≤ 10% µS/cm **Dissolved Oxygen:** all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

Revision Date: October 22, 2013

GROUNDWATER SAMPLING LOG

SITE NAME: TWP Roswell Station 9		SITE LOCATION: 6381 North Main Street Roswell, NM 88201	
WELL NO: MW-26	SAMPLE ID: MW-26		DATE: 12/01/14

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/2"	WELL SCREEN INTERVAL DEPTH: 43 feet to 63 feet	STATIC DEPTH TO WATER (feet): 52.21	PURGE PUMP TYPE OR BAILER: 2" Bladder Pump

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY

= (65 feet – 52.21' feet) X 0.16 gallons/foot = 2.04 gallons

3 WELL VOLUMES = 6.13 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 15:20	PURGING ENDED AT: 15:39	TOTAL VOLUME PURGED (gallons): 6.25

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/l or % saturation	OXYGEN REDUCTION POTENTIAL (mV)	COLOR (describe)	ODOR (describe)
15:20	Initial	0	0.33	52.21	7.17	15.93	3.853	3.05	16.4	Clear	None
15:23	1.0	1.0	0.33	—	7.18	16.32	3.972	2.65	16.7	clear	None
15:26	2.0	2.0	0.33	—	7.22	16.27	3.983	2.68	15.6	Clear	None
15:29	3.0	3.0	0.33	—	7.23	16.22	3.946	2.33	15.4	clear	None
15:32	4.0	4.0	0.33	—	7.23	16.22	3.936	2.27	15.4	clear	None
15:35	5.0	5.0	0.33	—	7.22	16.13	3.934	2.32	15.5	clear	None
15:39	6.25	6.25	0.33	—	7.22	16.05	3.936	2.36	15.6	clear	None

INSTRUMENTS USED: YSI 556 MPS Serial # 05F 2274 AL

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION: Clayton M Barnhill / CMP	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 15:40	SAMPLING ENDED AT: 15:55

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (Replaced) DUPLICATE: (Y) N MS/MSD

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (gal. per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
MW-26	21	CG	40mL	HCL	840	7.22	VOC's MS/MSD	BP	0.33

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization:
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units **Temperature:** ≤ 10% °C **Specific Conductance:** ≤ 10% µS/cm **Dissolved Oxygen:** all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

Revision Date: October 22, 2013

GROUNDWATER SAMPLING LOG

SITE NAME: TWP Roswell Station 9		SITE LOCATION: 3361 North Main Street Roswell NM 88201	
WELL NO: MW-20	SAMPLE ID: MW-20		DATE: 12/01/14

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/2"	WELL SCREEN INTERVAL DEPTH: 46 feet to 61 feet	STATIC DEPTH TO WATER (feet): 55.92	PURGE PUMP TYPE OR BAILER: 2" Bladder Pump

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY

= (64' feet − 55.92' feet) X 0.16 gallons/foot = 1.30 gallons

3 WELL VOLUMES = 3.92 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 14:52	PURGING ENDED AT: 15:10	TOTAL VOLUME PURGED (gallons): 4.0

TIME	VOLUME PURGED (gallons)	CUMUL VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND (circle units) µmhos/cm or (mS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	OXYGEN REDUCTION POTENTIAL (mV)	COLOR (describe)	ODOR (describe)
14:53	Initial	0	0.25	55.82	7.51	15.71	3.782	3.42	8.7	Clear	None
14:57	1.0	1.0	0.25	—	7.17	16.08	3.981	3.24	16.8	Clear	None
15:01	2.0	2.0	0.25	—	7.28	15.96	3.976	3.18	14.2	Clear	None
15:05	3.0	3.0	0.25	—	7.29	16.02	3.966	3.15	14.0	Clear	None
15:10	4.0	4.0	0.25	—	7.29	16.02	3.961	3.14	13.9	Clear	None

INSTRUMENTS USED: YSI 556 MPS Serial # 05F 2274 AL

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; (2") = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; (1/2") = 0.010; 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; (BP) Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 15:10	SAMPLING ENDED AT: 15:12
Clayton M Borchill / CMB			

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-20	3	CG	40mL	HCL	120	7.29	VOC's	BP	

REMARKS:

MATERIAL CODES: AG = Amber Glass; (CG) = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization:
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units **Temperature:** ≤ 10% °C **Specific Conductance:** ≤ 10% µS/cm **Dissolved Oxygen:** all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

Revision Date: October 22, 2013

GROUNDWATER SAMPLING LOG

SITE NAME: TWP Roswell Station 9		SITE LOCATION: 6381 N. Main Street Roswell, NM 88201	
WELL NO: MW-34	SAMPLE ID: MW-34		DATE: 12/01/14

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/2"	WELL SCREEN INTERVAL DEPTH 49 feet to 79 feet	STATIC DEPTH TO WATER (feet): 64.08'	PURGE PUMP TYPE OR BAILER: 2" Bladder Pump

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY

= (75.75 feet – 64.08 feet) X 0.16 gallons/foot = 1.867 gallons

3 WELL VOLUMES = 5.60 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet).	FINAL PUMP OR TUBING DEPTH IN WELL (feet)	PURGING INITIATED AT 14:01	PURGING ENDED AT 14:30	TOTAL VOLUME PURGED (gallons) 5.75

TIME	VOLUME PURGED (gallons)	CUMUL VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND (circle units) µmhos/cm mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	OXYGEN REDUCTION POTENTIAL pH (mV)	COLOR (describe)	ODOR (describe)
14:01	Initial	0	0.20	64.08	7.20	15.69	3.797	1.70	16.1	clear	None
14:06	1	1.0	0.20	—	7.30	16.04	3.789	0.94	13.6	clear	None
14:11	2	2.0	0.20	—	7.35	16.45	3.777	0.74	12.3	clear	None
14:16	3	3.0	0.20	—	7.37	16.49	3.775	0.70	11.9	clear	None
14:21	4	4.0	0.20	—	7.38	16.45	3.770	0.69	11.9	clear	None
14:30	5.75	5.75	0.20	—	7.37	16.49	3.768	0.68	11.9	clear	None

INSTRUMENTS USED: YSI 556 MPS Serial # 05F2274AC

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02, 1" = 0.04, 1.25" = 0.06, 2" = 0.16, 3" = 0.37, 4" = 0.65, 5" = 1.02, 6" = 1.47, 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006, 3/16" = 0.0014, 1/4" = 0.0026, 5/16" = 0.004, 3/8" = 0.006, 1/2" = 0.010, 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer, BP = Bladder Pump, ESP = Electric Submersible Pump, PP = Peristaltic Pump, O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION: Clayton M Berryhill / CMB	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT 14:30	SAMPLING ENDED AT 14:40
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) replaced)	DUPLICATE Y (N)	MS/MSD

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-34	21	CG	40mL	HCl	840	7.37	BTEX/MTBE	BP	0.20

REMARKS:

MATERIAL CODES: AG = Amber Glass, CG = Clear Glass, PE = Polyethylene, PP = Polypropylene, S = Silicone, T = Teflon, O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump, B = Bailer, BP = Bladder Pump, ESP = Electric Submersible Pump, RFPP = Reverse Flow Peristaltic Pump, SM = Straw Method (Tubing Gravity Drain), O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization:
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS.
pH: ≤ 10% units **Temperature:** ≤ 10% °C **Specific Conductance:** ≤ 10% µS/cm **Dissolved Oxygen:** all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

Revision Date: October 22, 2013

GROUNDWATER SAMPLING LOG

SITE NAME: TWP Roswell Station 9		SITE LOCATION: 6361 North Main Street Roswell, NM 88201	
WELL NO: MW-14	SAMPLE ID: MW-14		DATE: 12/01/2014

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/2"	WELL SCREEN INTERVAL DEPTH: 44.5 feet to 64.5 feet	STATIC DEPTH TO WATER (feet): 56.08	PURGE PUMP TYPE OR BAILER: 2" Bladder Pump

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY

= (64.5 feet − 56.08' feet) X 0.16 gallons/foot = 1.347 gallons

3 WELL VOLUMES = 4.04 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet)	FINAL PUMP OR TUBING DEPTH IN WELL (feet)	PURGING INITIATED AT: 13:26	PURGING ENDED AT: 13:47	TOTAL VOLUME PURGED (gallons): 4.0

TIME	VOLUME PURGED (gallons)	CUMUL VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	OXYGEN REDUCTION POTENTIAL (circle units) mV or mV	COLOR (describe)	ODOR (describe)
13:26	Initial	0	0.16	56.08	7.25	16.39	3.824	2.42	15.0	Clear	None
13:32	1	1.0	0.16	—	7.32	17.01	3.843	1.41	13.1	Clear	None
13:37	2	2.0	0.2	—	7.38	16.88	3.844	1.35	11.6	Clear	None
13:42	3	3.0	0.2	—	7.40	16.66	3.837	1.14	11.3	Clear	None
13:47	4	4.0	0.2	—	7.39	16.64	3.833	1.06	11.4	Clear	None

INSTRUMENTS USED:

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0008; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION	SAMPLER(S) SIGNATURE(S)	SAMPLING INITIATED AT: 13:47	SAMPLING ENDED AT: 13:49
Clayton M Borah:11 / CMS			

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-14	3	CG	40mL	HCl	120 mL		BTEX	BP	0.20

REMARKS

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization:
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units **Temperature:** ≤ 10% °C **Specific Conductance:** ≤ 10% µS/cm **Dissolved Oxygen:** all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

Revision Date: October 22, 2013

GROUNDWATER SAMPLING LOG

SITE NAME: TWP Roswell Station 9	SITE LOCATION: 6381 N. Main Street Roswell NM 88201	
WELL NO: MW-13	SAMPLE ID: MW-13	DATE: 12/01/14

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/2"	WELL SCREEN INTERVAL DEPTH: 57' feet to 72' feet	STATIC DEPTH TO WATER (feet): 65.27'	PURGE PUMP TYPE OR BAILER: 2" Bladder Pump

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY

= (72 feet – 65.27' feet) X 0.16 gallons/foot = 1.076 gallons

3 WELL VOLUMES = 3.23 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 12:50	PURGING ENDED AT: 13:10	TOTAL VOLUME PURGED (gallons): 3.25

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % Saturation	OXYGEN REDUCTION POTENTIAL (mV)	COLOR (describe)	ODOR (describe)
12:50	Initial	0	0.16	65.27	7.40	17.46	3.987	1.98	10.6	clear	Sulfur
12:56	1.0	1.0	0.16	—	7.09	18.21	3.996	1.59	18.3	clear	Sulfur
13:02	2.0	2.0	0.16	—	7.59	18.26	4.006	1.60	6.7	clear	Sulfur
13:08	3.00	3.00	0.16	—	7.60	18.04	4.008	1.41	6.5	clear	Sulfur
13:10	3.25	3.25	0.16	—	7.58	17.77	4.016	1.39	6.9	clear	Sulfur

INSTRUMENTS USED: YSI 556 MPS Serial # 05F 227421

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; (2" = 0.16); 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./FL): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; (1/2" = 0.010); 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; (BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION: Clayton M Barnhill / CMB	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 13:11	SAMPLING ENDED AT: 13:13

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
MW-13	3	GG	40mL	~~H2SO4~~ HCl	120 mL	7.58	BTEX	BP	0.16

REMARKS:

MATERIAL CODES: AG = Amber Glass; (CG) = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; (BP) = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization.
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units **Temperature:** ≤ 10% °C **Specific Conductance:** ≤ 10% µS/cm **Dissolved Oxygen:** all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

Revision Date: October 22, 2013

GROUNDWATER SAMPLING LOG

SITE NAME: TWP Roswell Station 9	SITE LOCATION: 6381 North Main Street Roswell NM 88201	
WELL NO: MW-21	SAMPLE ID: MW-21	DATE: 12/01/14

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/2"	WELL SCREEN INTERVAL DEPTH 54 feet to 74 feet	STATIC DEPTH TO WATER (feet): 66.17'	PURGE PUMP TYPE OR BAILER: Bladder Pump

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY

= (75 feet – 66.17' feet) X 0.16 gallons/foot = 1.41 gallons

3 WELL VOLUMES = 4.23 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet)	FINAL PUMP OR TUBING DEPTH IN WELL (feet)	PURGING INITIATED AT: 12:05	PURGING ENDED AT: 12:32	TOTAL VOLUME PURGED (gallons): 4.25

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/l or % saturation	OXYGEN REDUCTION POTENTIAL (circle units) mV	COLOR (describe)	ODOR (describe)
12:05	Initial	0	0.16	66.17	7.92	15.79	3.225	3.13	-1.2	Clear	None
12:11	1.0	1.0	0.16	—	7.23	16.09	3.413	1.31	15.3	Clear	None
12:17	2.0	2.0	0.16	—	7.38	15.90	3.432	1.33	11.9	Clear	None
12:23	3.0	3.0	0.16	—	7.41	15.60	3.438	1.40	11.1	Clear	None
12:32	4.25	4.25	0.16	—	7.41	14.94	3.457	1.52	11.3	Clear	None

INSTRUMENTS USED: YSI 556 MPS Serial # 05F 2274 AL

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; (2" = 0.16); 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006, 3/16" = 0.0014, 1/4" = 0.0026; 5/16" = 0.004, 3/8" = 0.006, (1/2" = 0.010); 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; (BP) Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION: Clayton M Burnhill / CMB	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 12:32	SAMPLING ENDED AT: 12:34
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-21	3	CG	40mL	HCL	120 mL	7.41	BTEX	BP	0.16

REMARKS:

MATERIAL CODES: AG = Amber Glass; (CG) Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; (BP) Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization.
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units **Temperature:** ≤ 10% °C **Specific Conductance:** ≤ 10% µS/cm **Dissolved Oxygen:** all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

Revision Date: October 22, 2013

SITE NAME:	TWP Roswell Station 9	SITE LOCATION:	6381 North Main Street Roswell, NM 88201
WELL NO:	MW-29	SAMPLE ID:	MW-29
DATE:	12/01/2014		

PURGING DATA

WELL DIAMETER (inches):	2"	TUBING DIAMETER (inches):	1/2"	WELL SCREEN INTERVAL DEPTH:	60 feet to 75 feet	STATIC DEPTH TO WATER (feet):	69.67'	PURGE PUMP TYPE OR BAILER:	2" Bladder Pump

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY

= (74.45 feet – 69.67' feet) X 0.16 gallons/foot = 0.76 gallons

3 WELL VOLUMES = 2.29 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 11:36	PURGING ENDED AT: 11:49	TOTAL VOLUME PURGED (gallons): 2.30

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	OXYGEN REDUCTION POTENTIAL (mV)	COLOR (describe)	ODOR (describe)
11:36	Initial	0	0.16	69.67'	8.21	14.63	2.786	7.82	-8.3	Clear	None
11:42	1.0	1.0	0.16	–	8.37	13.11	2.809	4.67	-11.4	Clear	None
11:45	1.5	1.5	0.16	–	8.26	12.72	2.817	4.73	-8.6	Clear	None
11:48	2.0	2.0	0.16	–	8.11	12.60	2.831	4.40	-4.8	Clear	None
11:49	2.30	2.30	0.16	–	8.04	12.55	2.637	4.34	-4.0	Clear	None

INSTRUMENTS USED: YSI 556 MPS Serial # 05F2274AL

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; (2") = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; (1/2") = 0.010; 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION:	Clayton McSwain III / Cmc	SAMPLER(S) SIGNATURE(S):		SAMPLING INITIATED AT: 11:50	SAMPLING ENDED AT: 11:53
PUMP OR TUBING DEPTH IN WELL (feet):		TUBING MATERIAL CODE:		FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N		TUBING Y (N) (replaced)		DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-29	3	GG	40mL	HCl	120 mL	8.04	BTEX	BP	

REMARKS:

MATERIAL CODES: AG = Amber Glass; (CG) = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; (BP) = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization:
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units **Temperature:** ≤ 10% °C **Specific Conductance:** ≤ 10% µS/cm **Dissolved Oxygen:** all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

GROUNDWATER SAMPLING LOG

SITE NAME: PUD Roswell Station 9	SITE LOCATION: 6381 North Main Street Rosalia, WA 99232		
WELL NO: MW-24D	SAMPLE ID: MW-24D	DATE: 11/26/14	

PURGING DATA

WELL DIAMETER (inches): 4"	TUBING DIAMETER (inches): —	WELL SCREEN INTERVAL DEPTH: 176 feet to 176 feet	STATIC DEPTH TO WATER (feet): 61.76	PURGE PUMP TYPE OR (BAILER): 9' PVC

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY

= (180' feet – 61.76' feet) X 0.65 gallons/foot = 76.86 gallons

3 WELL VOLUMES = 230.56 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 0925	PURGING ENDED AT: 0951	TOTAL VOLUME PURGED (gallons): 50

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	OXYGEN REDUCTION POTENTIAL (mV)	COLOR (describe)	ODOR (describe)
0925	Initial	0	1.0	61.76	6.81	16.70	3.732	6.29	35.1	clear	None
0930	10	10	1.0	—	6.80	16.56	3.649	6.81	85.4	clear	Sulfur
0934	20	20	1.0	—	6.77	16.47	3.783	4.05	26.7	clear	Sulfur
0939	30	30	1.0	—	6.75	16.48	3.809	3.37	26.8	clear	Sulfur
0946	40	40	1.0	—	6.75	16.40	3.807	2.78	26.8	clear	Sulfur
0951	50	50	1.0	—	6.67	16.42	3.808	2.34	28.7	clear	Sulfur

INSTRUMENTS USED: YSI 556 MPS Serial # 05F2274AC

WELL CAPACITY (Gallons Per Foot) 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.) 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION: Clayton M Barnhill / CMB	SAMPLE(S) SIGNATURE(S):	SAMPLING INITIATED AT: 10:00	SAMPLING ENDED AT: 10:02
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION HCl					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-24D	3	CG	40mL	HCl	120mL	6-67	BTEX	B	200 GPM

REMARKS:

MATERIAL CODES: AG = Amber Glass; (CG) = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; (B = Bailer); BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization:
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units **Temperature:** ≤ 10% °C **Specific Conductance:** ≤ 10% µS/cm **Dissolved Oxygen:** all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

Revision Date: October 22, 2013

GROUNDWATER SAMPLING LOG

SITE NAME: TWP Roswell Station 9	SITE LOCATION: 6381 North Main Street Roswell, NM 88201
WELL NO: MW-32	SAMPLE ID: MW-32
DATE: 11/25/14	

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/2"	WELL SCREEN INTERVAL DEPTH: 60 feet to 75 feet	STATIC DEPTH TO WATER (feet): 67.34'	PURGE PUMP TYPE OR BAILER: Bladder Pump

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY

= (74.20 feet – 67.34' feet) X 0.16 gallons/foot = 1.09 gallons

3 WELL VOLUMES = 3.29 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 15:17	PURGING ENDED AT: 15:44	TOTAL VOLUME PURGED (gallons): 3.5

TIME	VOLUME PURGED (gallons)	CUMUL VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND (circle units) µmhos/cm or (mS/cm)	DISSOLVED OXYGEN (circle units) mg/L or % saturation	OXYGEN REDUCTION POTENTIAL (mV)	COLOR (describe)	ODOR (describe)
15:17	Initial	0	0.10	67.34	5.91	16.37	3048	3.63	48.1	Clear	None
15:27	1.0	1.0	0.10	—	5.67	16.54	3.198	3.60	53.2	Clear	None
15:34	2.0	2.0	0.14	—	5.84	16.56	3.301	1.61	50.7	Clear	None
15:44	3.50	3.50	0.14		5.88	16.61	3.304	1.45	49.7	Clear	None

INSTRUMENTS USED: YSI 556 MPS Serial # 05F2274AC

WELL CAPACITY (Gallons Per Foot) 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; (2") = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.) 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; (BP) = Bladder Pump; ESP = Electric Submersible Pump; PP = Penstaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION: Clayton M Barnhill / CMB	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 15:45	SAMPLING ENDED AT: 15:46
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-32	3	CG	40mL	HCL	120mL	5.68	BTEX	BP	0.14

REMARKS:

MATERIAL CODES: AG = Amber Glass; (CG) = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; (BP) = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization.
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units **Temperature:** ≤ 10% °C **Specific Conductance:** ≤ 10% µS/cm **Dissolved Oxygen:** all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

Revision Date: October 22, 2013

GROUNDWATER SAMPLING LOG

SITE NAME: TWP Roswell Station 9	SITE LOCATION: 6381 North Main Street Roswell NM 88201	
WELL NO: MW-41	SAMPLE ID: MW-41	DATE: 11/25/14

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/2"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 56.96'	PURGE PUMP TYPE OR BAILER: 2" Bladder Pump

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY

= (70.06' feet − 56.96' feet) X 0.16 gallons/foot = 2.096 gallons

3 WELL VOLUMES = 6.28 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 13:56	PURGING ENDED AT: 14:27	TOTAL VOLUME PURGED (gallons): 6.5

TIME	VOLUME PURGED (gallons)	CUMUL VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	OXYGEN REDUCTION POTENTIAL (mV)	COLOR (describe)	ODOR (describe)
13:56	Initial	0	0.41	56.96	6.06	16.28	3.780	3.73	43.0	Clear	None
14:08	2.5	2.5	0.41	—	5.94	16.79	3.795	3.49	47.7	Clear	None
14:16	5.0	5.0	0.17	—	5.97	16.76	3.800	3.48	46.5	Clear	None
14:22	6.5	6.5	0.25	—	5.89	16.70	3.799	3.47	47.8	Clear	None

INSTRUMENTS USED: YSI 556 MPS Serial # 05F2274AC

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; (2") = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; (BP) = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION: Clayton M Barnhill / Cardno	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 14:23	SAMPLING ENDED AT: 14:26

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-41	3	CG	40mL	HCl	120 µL	5.89	VOC's	BP	0.25

REMARKS:

MATERIAL CODES: AG = Amber Glass; (CG) = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; (BP) = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization.
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units **Temperature:** ≤ 10% °C **Specific Conductance:** ≤ 10% µS/cm **Dissolved Oxygen:** all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

Revision Date: October 22, 2013

GROUNDWATER SAMPLING LOG

SITE NAME: TWP Roswell Station 9	SITE LOCATION: 6381 North Main Street Roswell NM 88201
WELL NO: MW-40	SAMPLE ID: MW-42-40
DATE: 11/25/14	

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/2"	WELL SCREEN INTERVAL DEPTH feet to feet	STATIC DEPTH TO WATER (feet): 54.23	PURGE PUMP TYPE OR BAILER: 2" Bladder Pump

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY

= (70.13' feet – 54.23' feet) X 0.16 gallons/foot = 2.54 gallons

3 WELL VOLUMES = 7.63 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 13:25	PURGING ENDED AT: 13:41	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	OXYGEN REDUCTION POTENTIAL pH (mV)	COLOR (describe)	ODOR (describe)
13:25	Initial	0	0.83	54.23	6.07	16.26	3.897	2.91	43.6	Turbid	Slight Odor
13:28	2.5	2.5	0.83	—	5.79	16.56	3.883	2.57	51.5	Clear	None
13:35	5.0	5.0	0.36	—	5.86	16.56	3.884	2.49	50.4	Clear	None
13:41	7.75	7.75	0.36	—	5.98	16.56	3.883	2.52	48.5	Clear	None

INSTRUMENTS USED: YSI 556 MPS Serial # 06E227#AL

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION: Clayton McCorkle / CMB	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 13:41	SAMPLING ENDED AT: 13:42

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) Replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-40	3	CG	40mL	HCL	120 mL	5.98	VOC's	BP	2.366PM

REMARKS: Purge H2O placed in Drum Then transferred to Surge Tank.

MATERIAL CODES: AG = Amber Glass; (CG) = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; (BP) = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization:

STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:

pH: ≤ 10% units **Temperature:** ≤ 10% °C **Specific Conductance:** ≤ 10% µS/cm **Dissolved Oxygen:** all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

Revision Date: October 22, 2013

GROUNDWATER SAMPLING LOG

SITE NAME: TWP Roswell Station 9	SITE LOCATION: 6381 North Main Street Roswell, NM 88201	
WELL NO: MW-42	SAMPLE ID: MW-42	DATE: 11/25/14

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/2"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 56.25'	PURGE PUMP TYPE OR BAILER: Bladder 2" Pump

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY

= (75.95' feet – 56.25' feet) X 0.16 gallons/foot = 3.31 gallons

3 WELL VOLUMES = 9.936 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet)	FINAL PUMP OR TUBING DEPTH IN WELL (feet)	PURGING INITIATED AT: 12:43	PURGING ENDED AT: 13:07	TOTAL VOLUME PURGED (gallons): 10

TIME	VOLUME PURGED (gallons)	CUMUL VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	OXYGEN REDUCTION POTENTIAL pH (mV)	COLOR (describe)	ODOR (describe)
12:43	Initial	0	0.83	55.25'	5.97	15.98	3.919	2.84	48.5	Clear	None
12:49	2.5	2.5	0.83	—	5.53	16.34	3.927	2.45	58.3	Clear	None
12:55	5.0	5.0	0.83	—	5.66	16.33	3.925	2.50	54.7	Clear	None
13:01	7.5	7.5	0.83	—	5.77	16.32	3.914	2.52	53.4	Clear	None
13:07	10.0	10.0	0.83	—	6.86	16.27	3899	2.52	51.2	Clear	None

INSTRUMENTS USED: YSI 556 MPS Serial # 05F2274 AL

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; (2" = 0.16); 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; (1/2" = 0.010); 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; (BP = Bladder Pump); ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION	SAMPLER(S) SIGNATURE(S)	SAMPLING INITIATED AT: 13:08	SAMPLING ENDED AT: 13:09
Clayton M Barnhill/CMB	Clayton M Barnhill CB		

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (ml per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
MW-42	3	CG	40mL	HCL	120mL	5.86	8 VOC's	BP	0.836 GPM

REMARKS: Purge H2O placed in drum & transferred to Surge Tank

MATERIAL CODES: AG = Amber Glass; (CG = Clear Glass); PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; (BP = Bladder Pump); ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization:
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units **Temperature:** ≤ 10% °C **Specific Conductance:** ≤ 10% µS/cm **Dissolved Oxygen:** all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

Revision Date: October 22, 2013

GROUNDWATER SAMPLING LOG

SITE NAME: TWP Roswell Station 9		SITE LOCATION: 6381 N. Main Street Roswell, NM 88201	
WELL NO: MW-35	SAMPLE ID: MW-35		DATE: 11/25/14

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/2"	WELL SCREEN INTERVAL DEPTH: 54 feet to 74 feet	STATIC DEPTH TO WATER (feet): 61.01'	PURGE PUMP TYPE OR BAILER: Bladder Pump

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY

= (79.21 feet – 61.01' feet) X 0.16 gallons/foot = 2.912 gallons

3 WELL VOLUMES = 8.73 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + 11.15 gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): —	FINAL PUMP OR TUBING DEPTH IN WELL (feet): —	PURGING INITIATED AT: 10:13	PURGING ENDED AT: 10:43	TOTAL VOLUME PURGED (gallons): 8.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	OXYGEN REDUCTION POTENTIAL ORP (mV)	COLOR (describe)	ODOR (describe)
10:13	Initial	0	0.14	61.01	5.93	15.94	4.093	4.35	47.9	Clear	None
10:27	2	2	0.14	—	6.02	16.58	4.103	4.21	46.0	Clear	None
10:41	4	4	0.14	—	6.03	16.53	4.107	4.31	45.6	Clear	None
10:55	6	6	0.14	—	6.03	16.45	4.108	4.31	45.6	Clear	None
11:15	8.75	8.75	0.14	—	6.03	16.46	4.108	4.28	45.6	Clear	None

INSTRUMENTS USED:

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; (2") = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; (1/2") = 0.010; 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; (BP) = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION: Clayton M Barnhill / CMB	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 11:16	SAMPLING ENDED AT: 11:18

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW35	3	CG	40mL	HCL	120 mL	6.03	BTEX	BP	0.14 gpm

REMARKS:

MATERIAL CODES: AG = Amber Glass; (CG) = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; (BP) = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization:
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units **Temperature:** ≤ 10% °C **Specific Conductance:** ≤ 10% µS/cm **Dissolved Oxygen:** all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

Revision Date: October 22, 2013

GROUNDWATER SAMPLING LOG

SITE NAME: TWP Roswell Station 9		SITE LOCATION: 6381 North Main Street Roswell, OH 45201	
WELL NO: MW-37	SAMPLE ID: MW-37		DATE: 11/25/2014

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): ~~5/8~~ 1/2"	WELL SCREEN INTERVAL DEPTH: 50 feet to 70 feet	STATIC DEPTH TO WATER (feet): 59.20'	PURGE PUMP TYPE OR BAILER: 3" Bladder Pump

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY

T.D. = 70'

= (70 feet − 59.20 feet) X 0.16 gallons/foot = 1.72 gallons

3 WELL VOLUMES = 5.18 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 0937	PURGING ENDED AT: 0955	TOTAL VOLUME PURGED (gallons): 5.25

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) mg/L or % saturation	OXYGEN REDUCTION POTENTIAL (circle units) pH (mV)	COLOR (describe)	ODOR (describe)
0940	Initial	Ø	0.50	59.20	6.25	16.17	3.923	7.16	39.5	Clear	None
0942	1	1	0.50	—	5.96	16.59	3.970	7.10	47.5	Clear	Sulfur
0944	2	2	0.50	—	5.95	16.61	3.971	6.09	47.6	Clear	None
0948	3	3	0.25	—	5.96	16.59	3.971	4.89	47.3	Clear	None
0952	4	4	0.25	—	5.97	16.62	3.967	4.29	47.1	Clear	None
0955	5.25	5.25	0.25	—	5.98	16.62	3.965	4.07	47.0	Clear	None

INSTRUMENTS USED:

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; (2" = 0.16); 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; (1/2" = 0.010); 5/8" = 0.016

PURGING EQUIPMENT USED: B = Bailer; (BP = Bladder Pump); ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA[1]

SAMPLED BY (PRINT) / AFFILIATION: Clayton M Barnhill / CMB	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 0956	SAMPLING ENDED AT: 0957

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
MW-37	3	CG	40mL	HCL	120 mL	5.98	BTEX	BP	0.25GPM

REMARKS:

MATERIAL CODES: AG = Amber Glass; (CG = Clear Glass); PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; (BP = Bladder Pump); ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. Sample collection will occur after 3 well volumes are purged or after well stabilization:
STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ≤ 10% units **Temperature:** ≤ 10% °C **Specific Conductance:** ≤ 10% µS/cm **Dissolved Oxygen:** all readings ≤ 10% mg/L
Oxygen Reduction Potential: ≤ 10% mV

Revision Date: October 22, 2013

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Location TWP Roswell Station 9 Date 11/19/2014

Project / Client GW Monitoring 2014

EarthCon By: CMB Environmental & Geological Services, Inc. Page 1 of —

Arrived on-site @ 13:30 hr.

Warm Sunny 65°F NNW WIND @ 8mph Barometric Pressure 30.13" 59°F →

Time	Well #	Dpth	DTW	T.D.	Remarks
13:54	MW-37	Ø	59.20'	—	2" Bladder pump in well
14:00	MW-34	Ø	64.08'	—	2" Bladder pump in well
14:06	MW-35	Ø	61.01'	—	2" Bladder pump in well
14:13	MW-32	Ø	67.34'	—	2" Bladder pump in well
14:19	MW-33	Ø	65.08'	—	2" Bladder pump in well
14:24	*MW-29	Ø	69.67'	—	2" Bladder pump in well
*Removed pump to get water level.					
14:32	MW-28	Ø	69.82'	—	2" Bladder pump in well
14:39	MW-30	Ø	66.97'	—	2" Bladder pump in well
14:46	MW-27	68.96'	68.97'	PSH in well,	2" MW *PSH No pump
14:51	MW-21	Ø	66.17'	—	2" Bladder pump in well
14:56	MW-17	Ø	62.40'	—	2" Bladder pump in well
15:02	MW-15	Ø	60.38'	—	2" Bladder pump in well
15:07	MW-14	Ø	56.08'	—	2" Bladder pump in well
15:12	MW-7	Ø	64.02'	—	NO pump in well
15:10	*MW-16	66.80'	66.91'	—	NO pump * PSH in well 0.11' PSH

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Location TWP Roswell Station 9 Date 11/19/14

Project / Client GW Monitoring 2014

EarthCon By: CMB Environmental & Geological Services Inc. Page 2 of —

Time	Well #	Dpth	DTW	T.D.	Remarks
15:16	MW-12	56.90'	59.91'	—	* NO PUMP PSH in well 3.01' PSH
15:23	MW-22	Ø	59.38'	—	No pump
15:29	*MW-20	Ø	55.82'	—	2" Bladder pump in well
*~~Pulled pump~~					
15:35	MW-26	Ø	52.21'	—	2" Bladder pump in well 4" PVC MW
15:42	MW-24D	Ø	61.76'	—	2" Bladder pump in well
15:52	MW-42	Ø	55.25'	—	2" Bladder pump in well
15:55	MW-40	Ø	54.23'	—	2" Bladder pump in well
16:00	MW-44	Ø	56.96'	—	2" Bladder pump in well
16:07	MW-39	Ø	50.69'	—	2" Bladder pump in well String also
16:15	MW-11	Ø	66.47'	—	No pump
16:19	MW-10	Ø	70.25'	—	No pump
16:22	MW-3	Ø	67.74'	—	No pump
16:28	MW-13	Ø	65.27'	—	2" Bladder pump in well
16:34	RW-1	Ø	32.46'	—	No pump String also
16:40	MW-2	Ø	60.60'	—	No pump
16:47	MW-1B	*61.87'	64.03'	—	*PSH in well NO PUMP 2.16' PSH

@ 7:00 Partly Cloudy 62°F Barometric Pressure 30.06" →

SSW Wind @ 8mph Left Site.

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Location: TWP Roswell Station 9 Date: 11/20/14

Project / Client: GW Monitoring 2014

EarthCon By: CMB Environmental & Geological Services Inc. Page 3 of —

Arrive on-site @ 12:30 hr.
57°F Warm, Partly Cloudy
WSW Wind 5 mph, Barometric Pressure 30.03" →

Time	Well #	Dpsh	DTW	T.D.	Remarks
13:08	MPE 7	Ø	68.21'	—	No pump in well
13:11	MPE 9	Ø	68.34'	—	No pump
13:17	MPE 8	Ø	66.76	—	No pump
13:24	MPE 11	Ø	64.35	—	No pump
13:33	MPE 10	66.64'	67.39'	0.75' PSH	No pump PSH in well
13:39	MPE 12	67.07'	67.27'	0.20' PSH	No pump
13:45	MPE 13	64.55'	64.66	0.11' PSH	4" pump in well. PSH
14:07	MPE 16	65.96'	67.84"	1.88' PSH	4" pump in well. PSH

Had trouble with 3/4" Discharge Line to manifold - while pulling pump to check for sand build up on bottom - MPE-16 - If pumps pull freely - No sand build up. Could not seperate 3/4 inch pump discharge line from Line to manifold - To Shop for 3/4" Threader - Left Site @ 1530

Die Head.

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Location: TWP Roswell Station 9 Date: 11/21/14

Project / Client: GW Monitoring 2014

EarthCon By: CMB Environmental & Geological Services, Inc Page 4 of —

Arrive on-site @ 0530 hr.
Sunny - 45°F NNW Wind 7 mph
Barometric Pressure @ 30.06" →
Brought 3/4" Pipe threader Head & rethreaded MPE 16 Discharge line that was frozen & broken from recent low freezing temps. Re-threaded discharge line @ 10:10 hr. Cleaned Airline coupling.

Time	Well #	Dpsh	DTW	T.D.	Remarks
10:20	MPE-17 MPE-14	65.20'	65.48'	0.26' PSH	4" pump in well PSH
10:26	MPE-15	Ø	63.73'	—	No pump in well
10:30	MPE-17	66.15'	66.64'	PSH 0.49'	4" pump in well PSH
10:32	MPE-38	67.31'	69.85	PSH 2.54'	PSH 4" pump in well PSH
10:38	MPE-19	Ø	66.62'	—	No pump
10:34	MPE-18	Ø	63.04'	—	No pump 4" pump in well w/ pump intake
10:37	MPE-20	65.59'	Top of pump. 66.47'	PSH 0.88'	
~~10:46~~	~~MPE-21~~				
10:45	MPE-21	58.71'	59.97'	PSH 1.26'	4" pump in well
14:55	MPE-24	58.58'	65.93	PSH 7.35'	4" pump in well
15:00	SVE-24	Ø	Ø	28.69'	2" SVE well
15:48	MPE-32	Ø	62.50'	—	4" pump in well

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Location TWP Raswell Station 9 Date 11/21/14

Project / Client GW Monitoring 2014

EarthCon; By: CMB Environmental & Geological Services, Inc. Page 5 of ___

Time	Well #	Depth	DTW	T.O.	Remarks
15:52	MPE-40	62.81'	63.21'	~~PSH in well~~ 0.40'	No pump
15:57	MPE-35	59.51	60.04'	~~PSH~~ 0.53'	No pump in well
16:01	MPE-41	60.87'	61.23'	PSH 0.36'	4" pump in well
13:53	MPE-36	Ø	53.13'	—	No pump
15:05	MPE-37	Ø	56.17'	—	No pump
14:24	MPE-33	Ø	58.46'	—	No pump
10:36	MPE-28	Ø	60.74'	—	No pump
10:35	SVE-28	Ø	26.59'	34.50'	2" SVE well
16:10	MPE-39	61.0'	61.26'	PSH 0.26'	No pump in well strong odor.
16:17	SVE-26	Ø	Ø	32.57'	2" SVE well
16:20	MPE-26	66.28	66.63'	PSH 0.35'	4" pump in well
16:25	MPE-27	Ø	65.48'	—	4" pump in well
16:27	SVE-27	Ø	~~33.01~~ 33.01'	34.07'	2" SVE well
16:30	MPE-31	65.79	66.39'	PSH in well 0.60'	4" pump in well
16:32	SVE-31	Ø	30.27'	33.15'	2" SVE well
16:35	MPE-34	Ø	65.89'	—	No pump
16:38	MPE-32	Ø	67.36'	—	No pump
16:40	SVE-30	Ø	43.30'	43.93'	2" SVE well
16:43	MPE-29	Ø	69.41'	—	No pump
16:45	MPE-25	Ø	68.74'	—	No pump
16:47	SVE-25	Ø	Ø	32.73'	2" SVE well

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Location TWP Raswell Station 9 Date 11/21/14

Project / Client GW Monitoring 2014

EarthCon; By: CMB Environmental & Geological Services, Inc. Page 6 of ___

Time	Well #	Depth	DTW	T.O.	Remarks
16:50	MPE-22	Ø	68.59'	—	No pump
16:52	SVE-22	~~33.06~~ Ø	~~33.06~~ —	33.06'	2" SVE well 4" pump in well
16:55	MPE-23	63.97'	65.57'	PSH in well 1.60'	
16:58	SVE-23	32.15'	32.84' 0.69' PSH	36.7'	2" SVE well Bladder

@ 17:00 hr. 57°F Wind NNW @ 12 mph Barometric Pressure 29.99" →

Left Site @ 17:00

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Location TWP Roswell Station 9 Date 12/29/14

Project / Client GW Monitoring Below PSH @ TWP Roswell / Earth Con. Consultants Inc. By: CMB Environmental Geological Services, Inc.

Page 1 of 2

Arrive on-site @ 13:00

MPE-39: Dpsh = 61.0

DTW = 61.26' psh Thickness = 0.26'

Started Bailing @ 13:30 hour 10 Gallons H_2O + PSH purged & Placed in on-site Drum @ 13:50 hr. Dpsh = Ø

DTW = 66.61'

Sampled 3 x 40 mL VOA's/HCl For BTEX 8260 and placed in Cooler.

MW-87: Dpsh = 68.96'

DTW = 68.97 0.01' psh in well

Started Bailing @ 14:06 hour @ 14:10 1 Gallon purged & placed in on-site Drum.

Dpsh = Ø DTW = 69.78'

Sampled 3 x 40 mL VOA's/HCl For 8260 BTEX @ 14:15 hr.

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Location TWP Roswell Station 9 Date 12/29/14

Project / Client GW Monitoring Below PSH @ TWP Roswell / Earth Con Consultants Inc. By: CMB Environmental & Geological Services Inc.

Page 2 of 2

MPE-31: Dpsh = 65.79'

DTW = 66.39' 0.60' psh in well. Started Bailing @ 14:29 hr. 9 Gallons purged @ 14:36 hr.

Dpsh = Ø DTW = 70.72'

Sampled 3 x 40 mL VOA's HCl @ 14:40 hr. For 8260 BTEX

Left Site @ 15:00

Ship Samples to Lab ALS Houston, Tx.

PG