

Compliance • Engineering • Remediation  
**LT Environmental, Inc.**  
**4600 W. 60th Avenue**  
**Arvada, Colorado 80003**

## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

**PROJECT NAME:** Powder Wash North CS South Pit

**PROJECT NO.:** 095819001

**LOGGED BY:** Dustin Held

**BORING/WELL ID.:** SB-02/SVE10

**SAMPLE MTHD:** Split Spoon

**COMPLETION DATE:** 11/19/2019

**DRILL MTHD:** Hollow Stem Auger

**TD (ft bgs):** 36.5'

**DRILLED BY:** Dakota Drilling

**DTW (ft bgs):** NA

**DETECTOR:** MiniRAE 3000

**SCREEN SLOT:** 0.010

**FILTER PACK:** 10/20 Silica Sand

**CASING LENGTH:** 25'

**ANNULUS SEAL:** Bentonite Chips

**SCREEN LENGTH:** 5'

**SURFACE SEAL:** NA

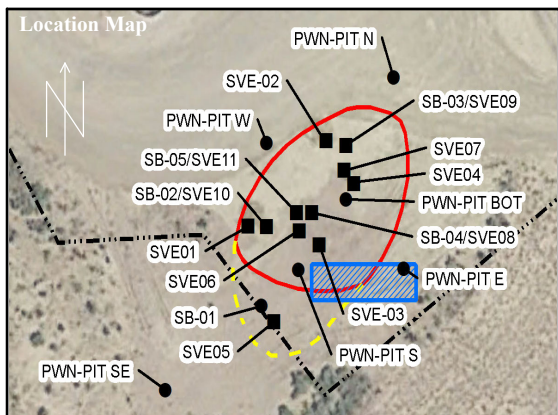
**HOLE DIAMETER.:** 8"

**WELL DIAMETER:** 2"

**CASING TYPE:** SCH. 40 PVC

**SCREEN TYPE:** SCH. 40 PVC

PID (ppm)	Staining	Moisture Content	Sample ID	Recovery (ft/ft)	Depth (ft)	USCS	USCS Graphic	Lithology Description	Well Construction
					0				
84.9		Moist	SB-02 @ 5'-7'	100%	5	ML		ML: 5'-7' - brown, SANDY SILT, med. gr. sand, low plasticity, non-uniform, no staining or hydrocarbon odor	
5.7		Moist		100%	10	ML		ML: 10'-12' - Same as above (SAA)	
3.9		Moist		100%	15	ML		ML: 15'-17' - SAA	
								ML: 20'-22' - SAA, white brown, few clays, no staining or hydrocarbon odor	
10.5		Moist		100%	20	ML			
557		Moist		100%	25	ML		ML: 25'-27' - SAA, few clays, no staining, hydrocarbon odor	
								CLS: 30'-32' - grey-brown, CLAYSTONE, hard, thick, calcite nodules, no staining, hydrocarbon odor	
1500		Dry	SB-02 @ 30'-32'	100%	30	CLS			
759		Moist		100%		CLS		CLS: 32'-34' - SAA, purple-grey @ 32.5', hydrocarbon odor	
1580				100%		CLS		CLS: 34'-35.5' - SAA, hydrocarbon odor	
1337		Dry	SB-02 @ 35.5'-36.5'	70%	35	CLS		CLS: 35.5'-36.5' - SAA, hydrocarbon odor	



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### BORING LOG/MONITORING WELL COMPLETION DIAGRAM

**PROJECT NAME:** Powder Wash North CS South Pit

**PROJECT NO.:** 095819001

**LOGGED BY:** Dustin Held

**BORING/WELL ID.:** SB-03/SVE09

**SAMPLE MTHD:** Split Spoon

**COMPLETION DATE:** 11/19/2019

**DRILL MTHD:** Hollow Stem Auger

**TD (ft bgs):** 33.5'

**DRILLED BY:** Dakota Drilling

**DTW (ft bgs):** NA

**DETECTOR:** MiniRAE 3000

**SCREEN SLOT:** 0.010

**FILTER PACK:** 10/20 Silica Sand

**CASING LENGTH:** 20'

**ANNULUS SEAL:** Bentonite Chips

**SCREEN LENGTH:** 10'

**SURFACE SEAL:** NA

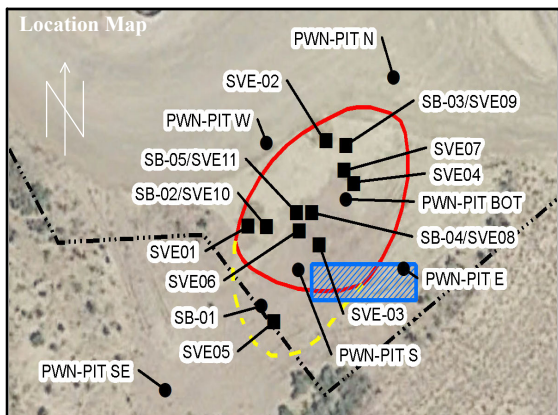
**HOLE DIAMETER.:** 8"

**WELL DIAMETER:** 2"

**CASING TYPE:** SCH. 40 PVC

**SCREEN TYPE:** SCH. 40 PVC

PID (ppm)	Staining	Moisture Content	Sample ID	Recovery (ft/ft)	Depth (ft)	USCS	USCS Graphic	Lithology Description	Well Construction
					0				
14.2		Moist	SB-03 @ 5'-7'	100%	5	ML		ML: 5'-7' - brown, SANDY SILT, med. gr. sand, low plasticity, uniform, no staining or hydrocarbon odor	
35.9		Moist		100%	10	ML		ML: 10'-12' - Same as above (SAA)	
60.2		Moist		100%	15	ML		ML: 15'-17' - SAA, hydrocarbon odor	
								SC: 20'-21' - grey, CLAY, some fine gr. sand, low plasticity, uniform, staining and hydrocarbon odor	
1657		Moist	SB-03 @ 20'-22'	100%	20	SC		ML: 21'-22' - brown SANDY SILT, fine gr. sands, uniform, non-plastic, no staining, hydrocarbon odor	
						ML			
1628		Dry		100%	25	ML		ML: 25'-27' - white-red, SANDY SILT, fine gr. sands, oxides, uniform, non-plastic, no staining, hydrocarbon odor	
892		Moist	SB-03 @ 32'-33.5'	100%	30	CLS		CLS: 30'-32' - grey, CLAYSTONE, hard, thick, calcite nodules, no staining, hydrocarbon odor	
1470		Dry		100%		CLS		CLS: 32'-33.5' - SAA, purple-grey, hydrocarbon odor	
					35				



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

**PROJECT NAME:** Powder Wash North CS South Pit

**PROJECT NO.:** 095819001

**LOGGED BY:** Dustin Held

**BORING/WELL ID.:** SB-04/SVE08

**SAMPLE MTHD:** Split Spoon

**COMPLETION DATE:** 11/18/2019

**DRILL MTHD:** Hollow Stem Auger

**TD (ft bgs):** 35'

**DRILLED BY:** Dakota Drilling

**DTW (ft bgs):** NA

**DETECTOR:** MiniRAE 3000

**SCREEN SLOT:** 0.010

**FILTER PACK:** 10/20 Silica Sand

**CASING LENGTH:** 21'

**ANNULUS SEAL:** Bentonite Chips

**SCREEN LENGTH:** 10'

**SURFACE SEAL:** NA

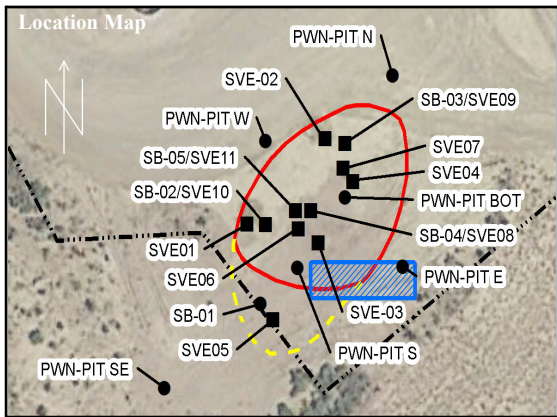
**HOLE DIAMETER.:** 8"

**WELL DIAMETER:** 2"

**CASING TYPE:** SCH. 40 PVC

**SCREEN TYPE:** SCH. 40 PVC

PID (ppm)	Staining	Moisture Content	Sample ID	Recovery (ft/ft)	Depth (ft)	USCS	USCS Graphic	Lithology Description	Well Construction
0.2		Moist		100%	5	ML		ML: 5'-7' - brown, SANDY SILT, medium to fine gr. sand, low plasticity, uniform, no staining or hydrocarbon odor	
0.8		Moist		100%	10	ML		ML: 10'-12' - Same as above (SAA)	
565.2		Moist	SB-04 @ 15'-17'	100%	15	ML		ML: 15'-17' - SAA, black staining and hydrocarbon odor at 15-15.5' bgs	
1700		Moist	SB-04 @ 20'-22'	100%	20	ML		ML: 20'-22' - SAA, no staining, hydrocarbon odor	
846		Moist		100%	25	ML		ML: 25'-27' - white to red, SANDY SILT, fine gr. sand, non-plastic, plasticity, oxidized, uniform, no staining, hydrocarbon odor	
1348		Moist		100%	30	CLS		CLS: 30'-31.5' - SAA,	
1244		Dry		100%		CLS		CLS: 31.5'-32' - grey, CLAYSTONE, hard, no staining, hydrocarbon odor	
1750		Dry	SB-04 @ 35'-36.5'	100%	35	CLS		CLS: 33'-34.5' - purple-grey, CLAYSTONE, hard, no staining, hydrocarbon odor	
						CLS		CLS: 35'-36.5' - grey, CLAYSTONE, hard, no staining, hydrocarbon odor, med. gr. sand @ 36.2-26.5' bgs	
					40				



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### BORING LOG/MONITORING WELL COMPLETION DIAGRAM

**PROJECT NAME:** Powder Wash North CS South Pit

**PROJECT NO.:** 095819001

**BORING/WELL ID.:** SB-05/SVE11

**COMPLETION DATE:** 11/20/2019

**LOGGED BY:** Dustin Held

**SAMPLE MTHD:** Split Spoon

**DRILL MTHD:** Hollow Stem Auger

**DRILLED BY:** Dakota Drilling

**DETECTOR:** MiniRAE 3000

**FILTER PACK:** 10/20 Silica Sand

**ANNULUS SEAL:** Bentonite Chips

**SURFACE SEAL:** NA

**HOLE DIAMETER.:** 8"

**WELL DIAMETER:** 2"

**CASING TYPE:** SCH. 40 PVC

**SCREEN TYPE:** SCH. 40 PVC

PID (ppm)	Staining	Moisture Content	Sample ID	Recovery (ft/ft)	Depth (ft)	USCS	USCS Graphic	Lithology Description	Well Construction
					0			0-40' - Soil boring not logged.	
					5				
					10				
					15				
					20				
					25				
					30				
					35				
1934	Dry		SB-05 @ 40'- 40.7'	75%	40	Sandstone		Sandstone: 40'-40.7' - white-red, SANDSTONE, fine-med. gr. sand, hard, competent, oxides, uniform, no staining, hydrocarbon odor	
1775	Dry			75%	45	Sandstone		Sandstone: 45'-45.6' - Same as above (SAA), hydrocarbon odor	
1475	Dry		SB-05 @ 50'- 50.6'	75%	50	Sandstone		Sandstone: 50'-50.6' - SAA, hydrocarbon odor	
1877	Dry		SB-05 @ 55'- 55.6'	75%	55	Sandstone		Sandstone: 55'-55.6' - SAA, hydrocarbon odor	
					60				