											Page 1 of	4
Hole No.:			78-7-69		Operation Nam	ne :			Mine 78	Surface N	o. 3 Mine	
Surface Elevation	on:		2073.5		Method of Drill				Rotary A		0. 0 1411110	
Bottom of Coal	Elevations:		ort Coal (E) - 19		Date Drilled:				09/19/69			
			ort Coal (D) - 19		Drilled By:					illing Com		
		Upper Kittan	ning Coal (C') -	1853	Logged By:				Tyger Dr Paint	illing Com	pany	
Static Water Ele	vations	Not Recorded			Township: County:				Cambria			
and Date Measu		Not recorded	-		Quadrangle:				Windber			
			-		Laboratory:				N/A			
Surveyed by: _		rwind	Method:	Rotary Air	Grid Coordinat		Northing	333,		Easting	1,674	
Remarks:	N	lone			Latitude:	40° 14'	35.85"	Lo	ngitude:	78°	48' 10.1	6"
				Lithologic [	Description: rock type,			Ove	burden An	alysis Logs	<u> </u>	
Graphic Log	Depth	Thickness	Scale 1" = 10'	weathering, o	color, fossils, carbonate	Water Conditions	Munsell	OBA	Log	% Total	Fizz	NP
(((((((((((((((((((((((((((((((((((((((		+		minerals con	ncentrations, pyrite, etc.		Color Code	Sample	Interval	Sulfur	Rating	
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(((((((((((((((((((((((((((((((((((((((	14.0	14.0										
========												
					Ohala							
					Shale							
========	00.0	0.0	00									
	20.0	6.0	20			-						
					Sandstone							
			30									
	34.0	14.0										
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:=:=:=:=:=:=:=:=												
			50									
:=:=:=:=:=:=:=												
:=:=:=:=:=:=:=:=:=:=												
:=:=:=:=:=:=:=	55.0	21.0										
			60									
			- 00									
					Sandstone							
			70									
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Hole No.:			78-9-69		Operation Nam	Α.			Mine 78	Surface N	o 3 Mine	
Surface Elevati	on:		2084.6		Method of Drilli				Rotary A		O. O WILLIO	
Bottom of Coal		Upper Freep	ort Coal (E) - 19	978.3	Date Drilled:				09/23/69			
			ort Coal (D) - 19		Drilled By:					illing Com		
		Upper Kittan	ning Coal (C') -	1865.3	Logged By:					illing Com	pany	
Static Water Ele	ationo	Not Recorded			Township:				Paint Cambria			
and Date Meas		Not Recorded	•		County: Quadrangle:				Windber			
una Dato modo	u. ou				Laboratory:				N/A			
Surveyed by:	Ber	wind	Method:	Rotary Air	Grid Coordinate	es	Northing	332,		Easting	1,674	,838
Remarks:	N	one			Latitude:	40° 14'	33.48"	Lo	ngitude:	78°	48' 07.1	0"
				1.14111-	December 1			0	ula al a . a . A	alvala I and		
Graphic	Depth	Thickness	Scale		Description: rock type, color, fossils, carbonate	Water	Munsell	OBA	Log	alysis Logs % Total	Fizz	
Log	· ·		1" = 10'		ncentrations, pyrite, etc.	Conditions	Color Code	Sample	Interval	Sulfur	Rating	NP
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	15.0	15.0										
========	15.0	15.0										
			20									
========												
					Shale							
					Silale							
=========												
	30.0	15.0	30									
			40									
					Sandstone							
			50									
			60									
			60									
				Sai	ndstone (broken)							
				Sai								
			70									

											Page 2 of	4
Hole No.:			78-9-69		Operation Nam	e:			Mine 78	Surface No	o. 3 Mine	
Surface Elevation			2084.6		Method of Drilli				Rotary A	ir		
Bottom of Coal	Elevations:		ort Coal (E) - 19		Date Drilled:				09/23/69			
			ort Coal (D) - 19 ning Coal (C') -		_ Drilled By: Logged By:					illing Comp		
		Оррог Кишиг	riing oodi (o)	1000.0	Township:				Paint	ming com	July	
Static Water Ele		Not Recorded			County:				Cambria			
and Date Measเ	ıred				Quadrangle:				Windber			
Surveyed by:	Bei	rwind	Method:	Rotary Air	_ Laboratory: Grid Coordinate	es	Northing	332,	N/A 994	Easting	1,674	.838
Remarks:		one			Latitude:	40° 14'			ngitude:		48' 07.1	
		T		1 141-1	December 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1			0	ubuala.u. A.u	aluaia I ana		
Graphic Log	Depth	Thickness	Scale 1" = 10'		Description: rock type, color, fossils, carbonate	Water Conditions	Munsell	OBA	Log	alysis Logs % Total	Fizz	NP
Log			1 - 10	minerals co	ncentrations, pyrite, etc.	Conditions	Color Code	Sample	Interval	Sulfur	Rating	INF
				Sai	ndstone (broken)							
			90									
	91.0	61.0	90									
:=:=:=:=:=:=:=:=:=												
:=:=:=:=:=:=:=:=:= :=:=:=:=:=:=:=:=												
:=:=:=:=:=:=:=:=:=:=:=:=												
:=:=:=:=:=:=:=:=:=:=:=					Sandy Shale							
:=			100									
:=:=:=:=:=:=:=:=:=:=:=												
:=												
:=:=:=:=:=:=:=:=	104.0	13.0										
				Upper Fr	reeport Coal (E) - 28.0"							
==========	107.0	3.0										
=======================================			110		Shale							
=======================================	113.0	6.0										
			120		Sandstone							
	125.0	12.0										
:=:=:=:=:=:=:=:=	120.0	12.0										
;=;=;=;=;=;=;=;=;=;= ;=;=;=;=;=;=;=;=;=												
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;=;=;=;=;=;=;=;=;=;= ;=;=;=;=;=;=;=;=;=			130									
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;=;=;=;=;=;=;=;=;= ;=;=;=;=;=;=;=;=					Sandy Shale							
:=:=:=:=:=:=:=:=:=:=:=					dandy driale							
:=:=:=:=:=:=:=:=:=:=			140									
:=:=:=:=:=:=:=:=												
:=:=:=:=:=:=:=:=												
:=:=:=:=:=:=:=:=	149.0	24.0										
=======================================	150.0	1.0	150	Lower Fr	reeport Coal (D) - 12.0"							
					Shale							
=======================================												
==========		1	1	l					I			

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	78.0.60										rage 5 or	4
Hole No.:			78-9-69		Operation Nam	ne :			Mine 78	Surface N	o. 3 Mine	
Surface Elevati	on:		2084.6		Method of Drill				Rotary A			
Bottom of Coal		Upper I	Freeport Coal (E	) - 1978.3	Date Drilled:	-			09/23/69			
			Freeport Coal (E		Drilled By:					illing Com	pany	
			ittanning Coal (		Logged By:					illing Com		
			-	•	Township:				Paint			
Static Water Ele	evations	Not Recorded			County:				Cambria			
and Date Measi	ured				Quadrangle:				Windber			
					Laboratory:				N/A			
Surveyed by:	Bei	wind	Method:	Rotary Air	Grid Coordinat	es	Northing	332,		Easting	1,674	
Remarks:					Latitude:	40° 14'	33.48"	Lo	ngitude:	78°	48' 07.1	10"
Graphic	Depth	Thickness	Scale		Description: rock type, color, fossils, carbonate	Water	Munsell	Ove OBA	rburden Ar Log	nalysis Logs % Total	Fizz	_
Log	Берш	THICKHESS	1" = 10'	minerals co	ncentrations, pyrite, etc.	Conditions	Color Code	Sample	Interval	Sulfur	Rating	NP
					, ру,							
			170									
			170									
			180									
					Sandstone							
			190									
			200									
			200									
			210									
	217.0	57.0										
				Upper Kitt	anning Coal (C') - 28.0"							
	220.0	3.0	220									
	221.0	1.0			Sandstone							
=========												
=========												
					<b>.</b>							
=======					Shale							
									1			
	230.0	9.0	230			]						
					Sandstone							
		1	ı I						1			

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Hole No.:	<b></b>		78-9-69 2084.6		Operation Nam				Mine 78 Rotary A	Surface No	o. 3 Mine	
Surface Elevation Bottom of Coal		Unner F	Freeport Coal (E	1978 3	Method of Drill Date Drilled:	my.			09/23/69			
,			reeport Coal (E		Drilled By:					illing Com	pany	
			ittanning Coal (		Logged By:				Tyger Dr	illing Com		
04-41-1W-4		N. A. D			Township:				Paint			
Static Water Ele and Date Measu		Not Recorded	-		County: Quadrangle:				Cambria Windber			
and Date Meast	area		-		Laboratory:				N/A			
Surveyed by:	Ве	rwind	Method:	Rotary Air	Grid Coordinat	tes	Northing	332,	994	Easting	1,674	
Remarks:					Latitude:	40° 14'	33.48"	Lo	ngitude:	78°	48' 07.1	0"
		1 1	ı	Lithologic	Description: rock type,		1	Ove	rhurden Ar	alysis Logs		
Graphic Log	Depth	Thickness	Scale 1" = 10'	weathering,	color, fossils, carbonate	Water Conditions	Munsell	OBA	Log	% Total	Fizz	NP
09				minerals co	ncentrations, pyrite, etc.		Color Code	Sample	Interval	Sulfur	Rating	
					Sandstone							
					Saliusione							
	250.0	20.0	250			-						
			260									
			200									
			270									
			280									
			290									
			300									
						1						
			310									
						1						
						1						

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Uala Na .			DD 1 15		Operation Nam				Mine 70	Curfoso N	a 2 Mina	
Hole No.: Surface Elevation	n.		RR-1-15 2020.0		Method of Drill				Rotary A	Surface N	o. 3 Mine	
Bottom of Coal		Unner Freen	ort Rider Coal -	2006.0	Date Drilled:	ilig.			08/19/15			
Dottom of Goar	Liovationo.		ort Coal (E) - 19		Drilled By:				Gary Toy			
			- ( ) -		Logged By:				Gary Toy			
Static Water Ele	vations	Not Recorded			Township:				Paint			
and Date Measu	ıred		_		County:				Somerse	et		
			_		Quadrangle:				Windber			
					Laboratory:				N/A			
Surveyed by:		ndber	Method:	Rotary Air	Grid Coordinat		Northing	332,		Easting	1,675	
Remarks:	N	lone			Latitude:	40° 14'	24.94"	Lo	ngitude:	785	47' 53.7	2"
		T		Lithologic De	scription: rock type,		1	Ove	rburden An	alysis Logs	·	
Graphic Log	Depth	Thickness	Scale 1" = 10'	weathering, col	or, fossils, carbonate	Water Conditions	Munsell	OBA	Log	% Total	Fizz	NP
XXXXXXXXXXXX				minerals conce	ntrations, pyrite, etc.	- Containionio	Color Code	Sample	Interval	Sulfur	Rating	
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX					Fill							
xxxxxxxxxxx	3.0	3.0										
						Water @ 4'						
						(10 gpm)						
				Sandsto	ne, Gray (hard)							
				(ve	oid @ 4')							
			10									
	11.0	8.0	10									
(11111111111111111111111111111111111111				CI	ay, Brown	1						
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	13.0	2.0										
========	14.0	1.0		Upper Freep	ort Rider Coal - 14'	-						
=========												
========				<u></u>								
=======================================				Shale, E	Brown @ Gray							
			20									
=======================================				Shale	e, Dark Gray							
=========	25.0	11.0										
				Upper Freep	ort Coal (E) - 27.5"	]						
==========	27.0 28.0	2.0 1.0			ale, Gray	-						
	20.0	1.0			aio, oraș	1						
			30									
			40									
			50									
			60									
			- 55									
			70									

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Hole No.:			RR-4-15		Operation Nam	ne :			Mine 78	Surface N	o. 3 Mine	
Surface Elevati	on:		1951.0		Method of Drill				Rotary A			
<b>Bottom of Coal</b>	Elevations:	Upper Kittani	ing Coal (C') - 1	913.0	Date Drilled:				08/25/15			
					Drilled By:				Gary Toy			
04-4'- 144-4 51		N. A. D			Logged By:				Gary Toy	/ Drilling		
Static Water Ele and Date Measi		Not Recorded			_ Township: County:				Paint Somerse	.+		
and Date Meast	irea				_ County: Quadrangle:				Windber			
					_ Laboratory:				N/A			
Surveyed by:	wii	ndber	Method:	Rotary Air	Grid Coordinat	tes	Northing	331,		Easting	1,675	,859
Remarks:		one		•	Latitude:	40° 14'			ngitude:		47' 53.7	
Graphic	Depth	Thickness	Scale		Description: rock type,	Water	Munsell	Over OBA		alysis Logs % Total	Fizz	
Log	Бериі	THICKHESS	1" = 10'		color, fossils, carbonate ncentrations, pyrite, etc.	Conditions	Color Code	Sample	Log Interval	Sulfur	Rating	NP
******												
*******												
*****												
*******												
*******												
*****												
*******												
*******			10	Si	I, Upper Kittanning							
*****				Spoi	i, Opper Kittanning							
******												
********												
****												
*****												
******												
******			20									
*****	21.0	21.0	20									
(((((((((((((((((((((((((((((((((((((((												
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//////////////////////////////////////												
///////////////////////////////////////					Clay, Brown							
///////////////////////////////////////					olay, Bronni							
(1111111111111111111111111111111111111												
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///////////////////////////////////////	31.0	10.0				-						
=========	33.0	2.0			Shale, Gray							
						1						
				Unner Kit	tanning Coal (C') - 62.0"							
				Оррег Ки	tariring Coar (C) - 02.0							
	38.0	5.0				1						
	39.0	1.0	40		Shale, Brown	-						
			40									
			50									
		-	60									
			70									
						1						

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											Page 2 of	2
Hole No.:			RR-7-15		Operation Nam	e:			Mine 78	Surface N	o. 3 Mine	
Surface Elevati			1913.0		Method of Drill	ing:			Rotary A			
Bottom of Coal	Elevations:		ning Coal (C) M ning Coal (C) -		Date Drilled:				08/26/15			
			ning Coal (C) -		Drilled By: Logged By:				Gary Toy			
			J - ( /		Township:				Paint	<u> </u>		
Static Water El		Not Recorded	_		County:				Somerse			
and Date Meas	ured		-		Quadrangle:				Windber N/A			
Surveyed by:	Wir	ndber	Method:	Rotary Air	Laboratory: Grid Coordinat	es	Northing	331,		Easting	1,675	5.253
Remarks:		one	•	,	Latitude:	40° 14'			ngitude:	78°	48' 01.5	
							1					
Graphic	Depth	Thickness	Scale		Description: rock type, color, fossils, carbonate	Water	Munsell	OBA	Log	alysis Logs % Total	Fizz	T
Log			1" = 10'		ncentrations, pyrite, etc.	Conditions	Color Code	Sample	Interval	Sulfur	Rating	NP
===========												
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========				Sh (with h	nale, Dark Gray ard sandy sections)							
				,	, ,							
=========												
=======================================	91.0	18.0	90									
	91.0	16.0										
	04.0	20		Middle Kit	ttannig Coal (C) - 32.0"							
==========	94.0	3.0										
=======												
============												
========												
============			100									
=========												
=========												
=========			110									
=======================================			110									
============					nale, Dark Gray							
========				(with h	ard sandy sections)							
=======================================												
			120									
			120									
=========												
=======================================												
========												
=======================================			130									
=======================================	133.0	39.0										
				(Lowe	Void er Kitttannig Mine)							
			140									
			150									

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Hole No.:			RR-9-15		Operation Nam	ne :			Mine 78	Surface N	o. 3 Mine	
Surface Elevati		-	2061.0		Method of Drill				Rotary A			
Bottom of Coal	Elevations:	Upper Freep	ort Coal (E) - 19	992.0	Date Drilled:				08/27/15			
					Drilled By: Logged By:				Gary Toy			
					Township:				Paint	, 2g		
Static Water El		Not Redorded			County:				Cambria			
and Date Meas	ured				Quadrangle:				Windber	•		
Surveyed by:	Be	erwind	Method:	Rotary Air	Laboratory: Grid Coordinat	tes	Northing	332,	N/A 351	Easting	1,675	5.482
Remarks:		lone		,	Latitude:	40° 14'			ngitude:		48' 07.1	
				1 14111 - 1	S		1	0		alvaia I and		
Graphic Log	Depth	Thickness	Scale 1" = 10'		Description: rock type, color, fossils, carbonate	Water Conditions	Munsell	OBA	Log	nalysis Logs % Total	Fizz	NP
			1 - 10	minerals con	centrations, pyrite, etc.	Conditions	Color Code	Sample	Interval	Sulfur	Rating	NF
				Sano	dstone / Clay mix							
	4.0	4.0		Same	iolono / Olay mix							
///////////////////////////////////////	4.0	4.0										
//////////////////////////////////////												
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					Clay, Brown							
//////////////////////////////////////	10.0	6.0	10									
	10.0	0.0	10			1						
				c	Shale, Brown							
					ard sandy sections)							
==========												
	19.0	9.0										
	19.0	9.0	20			1						
			30									
				Sa	indstone, Gray							
			40									
	46.0	27.0										
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	47.0	1.0		1	Clay, Brown							
			50									
=======================================						1						
==========												
=========					Shale, Gray							
			60									
========												
=======================================												
	67.0	20.0										
				Upper Fre	eeport Coal (E) - 28.0"	1						
	70.0	3.0	70			]						
=========	71.0	1.0			Shale, Gray	+						
						1	1					1

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											rage i oi	2
Hole No.:			RR-19-18		Operation Nam	ie:			Mine 78	Surface N	o. 3 Mine	
Surface Elevati		-	1853.5		Method of Drill	ing:			Rotary A			
Bottom of Coal	l Elevations:		ning Coal (C) -		Date Drilled:				06/22/20	18		
		Lower Kittanı	ning Coal (B) M	ined - 1775.5	Drilled By:				Berwind			
					Logged By:				Berwind			
Static Water El		Not Recorded			Township:				Paint			
and Date Meas	urea				County: Quadrangle:				Somerse			
					Laboratory:				N/A			
Surveyed by:	Bei	rwind	Method:	Rotary Air	Grid Coordinat	es	Northing	331,		Easting	1,674	1 804
Remarks:		one			Latitude:	40° 14'			ngitude:		48' 07.3	
•												
Graphic	Donath	Thickness	Scale		Description: rock type,	Water				alysis Logs		
Log	Depth	Thickness	1" = 10'		color, fossils, carbonate centrations, pyrite, etc.	Conditions	Munsell Color Code	OBA Sample	Log Interval	% Total Sulfur	Fizz Rating	NP
*****					oona anono, pyrno, otor			Gampio		Junui	rauing	
******												
******												
******												
******												
*****												
*******												
*******			40									
*******			10									
*****												l
******												
******************												l
*********												
******												l
******												
******					Fill (spoil)							l
********			20									
******												
******												
******												
******												
******												
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*******												
******			30									
*****************												
******												
*****												
*******												
*******												
******	37.0	37.0										
				Middle Kitta	anning Coal (C) - 35.0"							
	40.0	3.0	40									
========												
=========												
========												
===========				Sh	ale, Dark Gray							
=========			50		ard sandy streaks)							
												l
												l
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=========												l
========												l
========												l
===========					Shale, Black							
			60									l
========												
=======================================												l
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=========				Sha	ale, Dark Gray							l
========												
			70									l
===========			70									
==========												
	74.0	34.0										
				Vo	id - No Return							
					ower Kittaning Seam)							
	78.0	4.0										
========					Shale					1	1	

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Hole No.:			RR-19-18		Operation Nam					Surface No	o. 3 Mine	
Surface Elevation		_	1853.5		Method of Drilli	ing:			Rotary A			
Bottom of Coal	Elevations:		nning Coal (C) - 1 ning Coal (B) Mi		Date Drilled:				06/22/20 Berwind	18		
		Lower Killan	ining Coai (B) ivii	ned - 1775.5	Drilled By: Logged By:				Berwind			
Static Water Ele	evations	Not Recorded	-		Township:				Paint			
and Date Meası			_		County:				Somerse	t		
			_		Quadrangle:				Windber			
C	D-	m. da d	. Madhadi	Datami Ain	Laboratory:		N41- l		N/A	F 4'	4.074	004
Surveyed by: _ Remarks:		rwind lone	Method: _	Rotary Air	Grid Coordinate	40° 14'	Northing 20.78"	331,	ngitude:	Easting 78°	1,674 48' 07.3	
_							200				10 01.0	
Graphic Log	Depth	Thickness	Scale 1" = 10'	Lithologic Desc weathering, colo	cription: rock type, r, fossils, carbonate	Water Conditions	Munsell	Ove OBA	rburden An Log	alysis Logs % Total	Fizz	NP
==========			1 - 10	minerals concer	trations, pyrite, etc.	Conditions	Color Code	Sample	Interval	Sulfur	Rating	INF
=======================================												
========												
=======================================												
=========												
========			90	5	Shale							
=========												
========												
========												
=======================================												
	100.0	22.0	100									
			110									
			400									
			120									
			130									
			140									
			150									
		1	i I						I			

											Page 1 of	1
Hole No.:			RR-20-18		Operation Nam	٠.			Mine 78	Surface N	o 3 Mine	
Surface Elevati	on.		1942.1		Method of Drilli				Rotary A		O. 3 MITTE	
Bottom of Coal		Lower Freez	ort Coal (D) - 19	927.6	Date Drilled:	ilig.			06/25/18			
			ing Coal (C') - 1		Drilled By:				Berwind	·		
			<u> </u>		Logged By:				Berwind			
Static Water Ele	evations	Not Recorded	_		Township:				Paint			
and Date Meas	ured				County:				Somerse			
					Quadrangle:				Windber			
	_				Laboratory:				N/A			
Surveyed by:		rwind	Method:	Rotary Air	Grid Coordinate		Northing	332,		Easting	1,675	
Remarks:	IN .	lone			Latitude:	40° 14'	24.04	LO	ngitude:		48' 04.7	9
Crombia			Seele	Lithologic D	escription: rock type,	Water		Over	burden An	alysis Logs	;	
Graphic Log	Depth	Thickness	Scale 1" = 10'		olor, fossils, carbonate	Conditions	Munsell Color Code	OBA	Log	% Total	Fizz	NP
*****				minerals cond	entrations, pyrite, etc.		Color Code	Sample	Interval	Sulfur	Rating	
******												
******					Fill (il)							
*******					Fill (spoil)							
*****												
******	7.0	7.0				Water @ 7'						
						(+/- 1 gpm)						
			10	Shale,	Dark Gray (soft)							
========												
========	12.0	5.0										
				Lower Free	eport Coal (D) - 30.0"							
	15.0	3.0			, , , , , , , , , , , , , , , , , , , ,							
========												
				Shale Gr	ay (soft) / Clay mix							
==========				Gridio, Gr	ay (son) / siay iii.x							
			20									
					hale, Gray							
				(with	sandy streaks)							
========												
			30									
=========												
					le, Dark Gray							
				(with	sandy streaks)							
==========			40									
						Water @ 41' (+/- 3 gpm)						
				0.0	hala Diada	( , , , ,						
=======================================					hale, Black rd sandy streaks)							
========												
=======================================												
				Sha	le, Dark Gray							
	54.0	20.0	50									
=========	51.0	36.0										
				Upper Kittar	nning Coal (C') - 55.0"							
	56.0	5.0										
=========	00.0	0.0	† †	Sha	le, Dark Gray							
				S	hale, Gray							
=======================================	60.0	4.0	60		rd sandy streaks)							
	00.0	4.0	00									
			70									
		1	1				1					

										Page 1 of	3
Hole No.:			RR-24-18	Operation Nar	ne :			Mine 78	Surface N	o. 3 Mine	
Surface Elevation	on:		1970.9	Method of Dril				Rotary A		0. 0	
Bottom of Coal	Elevations:	Lower Freepo	ort (D) - 1942.9	Date Drilled:				07/18/18	}		
		Middle Kittan	ning (C) - 1807.					Berwind			
Static Water Ele	wations	Not Decorded		Logged By:				Berwind Paint			
Static Water Ele		Not Recorded	-	Township: County:				Somerse	at .		
and Bato modes	ou		-	Quadrangle:				Windber			
			-	Laboratory:				N/A			-
Surveyed by:		rwind	Method:	Rotary Air Grid Coordina		Northing		,372	Easting	1,674	
Remarks:	N	lone		Latitude:	40° 14'	27.29"	Lo	ngitude:	78°	° 48' 11.5	51"
		<del> </del>		Lithologic Description: rock type,			Ove	rburden Ar	nalysis Logs		
Graphic Log	Depth	Thickness	Scale 1" = 10'	weathering, color, fossils, carbonate	Water Conditions	Munsell	OBA	Log	% Total	Fizz	NP
///////////////////////////////////////				minerals concentrations, pyrite, etc.	+	Color Code	Sample	Interval	Sulfur	Rating	<u> </u>
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	2.0	2.0		Clay, Brown							
========   ========											
=======				Shale, Brown							
				(with clay streaks)							
========											
	10.0	8.0	10		- Dame					1	
//////////////////////////////////////	12.0	2.0		Clay, Brown	Damp					1	
========	*				1					1	
 										l	
=======				Shale, Brown							
				(with sandy sections)						l	
			20							l	
=======   ========											
				Shale, Dark Gray							
	26.0	14.0		Shale, Dark Gray							
				Lower Freeport Coal (D) - 22.0"	1						
=========	28.0	2.0			4						
			30								
				Shale, Dark Gray							
========	33.0	5.0									
000000000000000000000000000000000000000	34.0	1.0		Limestone-Shale Mix							
=======   =======											
			40	Shale, Brown & Gray (with hard sandy sections)							
=======================================				(marrial sallay seedle)							
========											
	45.0	44.0									
========	45.0	11.0			+						
				Sandstone, Hard Gray						l	
			50	, · ·,							
	F2 0	7.0									
:=:=:=:=:=:=:=:=:=	52.0	7.0		Sandy Shale, Brown	1					1	
:=:=:=:=:=:=:=:=	54.0	2.0		Gandy Ghale, DiOWII	4					1	
 										1	
										1	
=======   ========										1	
			60							1	
 			7							1	
========											
										1	
=======   =======										1	
				Shale, Dark Gray							
=======   =======				(with hard sandy sections)						1	
			70							1	
========		[								1	
=======   =======										1	
										1	
=======   ========								1		1	
								1		1	
=======================================										1	
		1 1	I		1			i	i	i	1

										Page 2 of	3
Hole No.:			RR-24-18	Operation	on Name :			Mine 78	Surface No	o. 3 Mine	
Surface Elevati	on:		1970.9	Method	of Drilling:			Rotary A		<u> </u>	
Bottom of Coal	Elevations:		oort (D) - 1942.9					07/18/18			
		Middle Kittar	nning (C) - 1807	.4 Drilled E Logged				Berwind Berwind			
Static Water Ele	evations	Not Recorded	-	Logged Townsh				Paint			
and Date Meası	ured			County:				Somerse	t		
				Quadra				Windber			
Surveyed by:	Re	rwind	Method:	Rotary Air Laborat	ory: ordinates	Northing	332,	N/A	Easting	1,674	180
Remarks:		lone	_ ivietilou.	Latitude		4' 27.29"		ngitude:		48' 11.5	
Graphic Log	Depth	Thickness	Scale 1" = 10'	Lithologic Description: rock type weathering, color, fossils, carbona minerals concentrations, pyrite, e	ate Conditions	Munsell Color Code	Ove OBA Sample	Log Interval	nalysis Logs % Total Sulfur	Fizz Rating	NP
========											
				Shale, Dark Gray							
=========				(with hard sandy streaks)							
=======================================	89.0	35.0									
			90								
				Sandstone, Hard Gray							
	93.0	4.0									
=========											
=========											
========											
=========			100	Shale, Gray							
=======				(with hard sandy sections)							
=========											
=======											
=========											
	109.0	16.0	110								
				Sandstone, Hard Gray							
			120								
	126.0	17.0									
=======================================		1									
========											
=======================================			130								
=======											
=========											
		1									
=======================================											
========											
=======================================			140								
=======											
=======================================				Shale, Dark Gray							
========		1		(with hard sandy streaks)							
=======================================		1									
=======		1									
		1									
			150								
=======================================											
=======================================											

										D 0 -f	0
										Page 3 of	3
Hole No.:			RR-24-18	Operation Na	ame :			Mine 78	Surface No	o. 3 Mine	
Surface Elevation	on:		1970.9	Method of Di				Rotary Ai			
Bottom of Coal	Elevations:		ort (D) - 1942.9	Date Drilled:				07/18/18			
		Middle Kittar	nning (C) - 1807.4					Berwind			
		N. C.	_	Logged By:				Berwind			
Static Water Ele		Not Recorded		Township:				Paint			
and Date Measu	urea			County: Quadrangle:				Somerse Windber	τ		
			-	Quadrangle. Laboratory:				N/A			
Surveyed by:	Be	erwind	Method:	Rotary Air Grid Coordin	nates	Northing	332,		Easting	1,674	1 489
Remarks:		None		Latitude:	40° 14'			ngitude:		48' 11.5	
-								-			
Graphic	D4h	Thistory	Scale	Lithologic Description: rock type,	Water			rburden An			
Log	Depth	Thickness	1" = 10'	weathering, color, fossils, carbonate minerals concentrations, pyrite, etc.	Conditions	Munsell Color Code	OBA Sample	Log Interval	% Total Sulfur	Fizz Rating	NP
========	161.0	35.0		Shale, Dark Gray							!
				Middle Wittensing Ocel (O) 05 Of							
	164.0	3.0		Middle Kittanning Coal (C) - 35.0"							
=========	165.0	1.0		Shale, Dark Gray	-						
			170								
			180								
			190								
			1.00								
			200								
			210								
			220								
			230								
			i l		1						

											Page 1 of	3
Hole No.:			RR-27-18		Operation Name :				Mine 78	Surface N	o. 3 Mine	
Surface Elevati		-	2002.4		Method of Drilling					of Drilling:		
Bottom of Coal	Elevations:		ort Coal - 1940.9 ort Coal - 1888.9		Date Drilled:				Date drill			
			ning Coal - 1834		Drilled By: Logged By:				Drilled by Logged b			
			g		Township:				Township			
Static Water Ele		Not Recorded			County:				County:			
and Date Meas	ured		-		Quadrangle: Laboratory:				Quadran Laborato			
Surveyed by:	Ве	erwind	Method:	Rotary Air	Grid Coordinates		Northing	333,		Easting	1,673	3.401
Remarks:	N	lone			Latitude:	40° 14'	37.80"		ngitude:		48' 25.7	
		T	<u> </u>	Lithologic Description	on: rock type			Ove	rhurden An	alysis Logs		
Graphic Log	Depth	Thickness	Scale 1" = 10'	weathering, color, fos	sils, carbonate	Water conditions	Munsell	OBA	Log	% Total	Fizz	NP
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1.0	1.0	-	minerals concentratio Clay, Brov	ns, pyrite, etc.		Color Code	Sample	Interval	Sulfur	Rating	
				- 7,								
			10									
			20									
				Sandstone, Brov	vn (hard)							
			30									
			40									
					D	amp @ 43'						
	49.0	48.0										
			50									
========												
=======================================				Shale, Dark	Grav							
=========				(with sandy str								
========	50.0	40.0										
=========	59.0	10.0	60	Linnas Francest Con	-l (E) 20 0"							
	61.0	2.0		Upper Freeport Coa	al (E) - 29.0"							
=======================================												
=========												
=======================================												
========												
=======================================				Shale, Dark	Gray							
=========			70	(with sandy str								
=======================================												
=======================================												
	77.0	10.0										
0000000000000000	77.0	16.0		I lucast								
00000000000000000		1	1	Limeston	c (acks)							

											Page 2 of	3
Hole No.:			RR-27-18		Operation Nan	ne :			Mine 78	Surface N	o. 3 Mine	
Surface Elevati		-	2002.4		Method of Drill					of Drilling:		
Bottom of Coal	Elevations:		ort Coal - 1940.9		Date Drilled:				Date dril			
			ort Coal - 1888.9 ning Coal - 1834		Drilled By: Logged By:				Drilled by			
		Оррег Типан	ning Coal - 1004		Township:				Townshi			
Static Water Ele		Not Recorded	_		County:				County:			
and Date Meas	ured		-		Quadrangle:				Quadran			
Surveyed by:	Rei	rwind	Method:	Rotary Air	Laboratory: Grid Coordina	tes	Northing	333	Laborato ,449	ery: Easting	1,673	3 401
Remarks:		one	mounou	rtotary 7 til	Latitude:	40° 14'			ngitude:		48' 25.7	
Graphic	Depth	Thickness	Scale 1" = 10'		Description: rock type, color, fossils, carbonate	Water	Munsell	OBA	Log	nalysis Logs % Total	Fizz	ND
Log	24.2	1	1" = 10"	minerals cor	ncentrations, pyrite, etc.	Conditions	Color Code	Sample	Interval	Sulfur	Rating	NP
00000000000000000000000000000000000000	81.0	4.0			Limestone	1						
==========												
==========												
=====================================			90									
=======   ========												
=======   =======				Sh	nale, Dark Gray							
========					ard sandy sections)							
 			100									
			100									
========												
========												
========												
========												
========												
 			110			Damp @ 110'						
 	113.0	32.0										
	114.0	1.0		Lower Fr	reeport Coal (D) - 6.0"	1						
==========												
==========												
			120									
==========												
========												
=======================================												
========												
========												
=======================================			130									
========												
========												
				Sh	nale, Dark Gray							
========					ard sandy sections)							
 			140									
========			170									
=========												
========												
============												
=========			150									
========												

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			DD 0= ::						NA:- == -			
Hole No.: Surface Elevati	on:		RR-27-18		Operation Na				Mine 78 S		. 3 Mine	
Bottom of Coal		Unner Freeno	2002.4 ort Coal - 1940.9	9	Method of Dri Date Drilled:	ming:			Method of Date drille			
Bottom or cour	Liovationo.		ort Coal - 1888.9		Drilled By:				Drilled by:			
			ning Coal - 1834		Logged By:				Logged by	<i>r</i> :		
					Township:				Township:			
Static Water Ele		Not Recorded	-		County: Quadrangle:				County:	lo:		
and Date Meas	urea		-		Laboratory:	-			Quadrang Laboratory			
Surveyed by:	Bei	wind	Method:	Rotary Air	Grid Coordin	ates	Northing	333,		asting	1,673,	,401
Remarks:	N	one			Latitude:	40° 14'	37.80"	Lo	ngitude:	78°	48' 25.70	
ļ		1 1		l ikhalasia	Description: rock type,		1	Ovo	rburden Ana	lucio I ogo		
Graphic Log	Depth	Thickness	Scale 1" = 10'	weathering,	color, fossils, carbonate	Water Conditions	Munsell	OBA	Log	% Total	Fizz	NP
			1 - 10	minerals co	ncentrations, pyrite, etc.	Conditions	Color Code	Sample	Interval	Sulfur	Rating	- NF
				01	and a David Const.							
					nale, Dark Gray ard sandy sections)							
========   ==========================	165.0	51.0										
	166.0	1.0			anning Coal (C') - 25.0"							
=========	167.0 168.0	1.0		Shale, Black in Upper Kit	nterbedded with coal - 12.0" tanning Coal (C') - 4.0"	_						
========					nale, Dark Gray							
========	170.0	2.0	170		,,							
			180									
			190									
			200									
			200									
			210									
			220									
		-	230									
									1			

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											Page 1 of	2
Hole No.:			RR-28-18		Operation Nam	ie:			Mine 78	Surface N	o. 3 Mine	
Surface Elevation	on:		1988.5		Method of Drill				Rotary A			
Bottom of Coal	Elevations:	Upper Freep	ort Coal - 1926.	7	Date Drilled:				08/14/18			
		Lower Freep	ort Coal - 1869.	5	Drilled By:				G.R. Toy	/ Drilling		
Static Water Ele		Not Recorded			Logged By: Township:				Berwind Paint			
and Date Measi		Not Recorded			County:				Somerse	٠t		
una Dato mouot					Quadrangle:				Windber			
					Laboratory:				N/A			
Surveyed by:	Ber	wind	Method:	Rotary Air	Grid Coordinat	es	Northing	333,	668	Easting	1,673	
Remarks:	N	one			Latitude:	40° 14'	39.95"	Lo	ngitude:	78°	48' 27.5	8"
		1 1		Lithologic	Description: rock type,	l	I	Over	rhurden An	alysis Logs		
Graphic Log	Depth	Thickness	Scale 1" = 10'		color, fossils, carbonate	Water Conditions	Munsell	OBA	Log	% Total	Fizz	NP
			1 - 10	minerals co	ncentrations, pyrite, etc.	Conditions	Color Code	Sample	Interval	Sulfur	Rating	INF
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					Clay, Brown							
(1111111111111111111111111111111111111					- 7,							
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	6.0	6.0										
				Sa	andstone, Brown							
			10									
			20									
				Sandstor	ne, Hard Brown & Gray							
						Damp @ 28'						
			30									
			-									
			40									
				Sa	andstone, Brown							
					andotorio, Brown							
			50									
	52.0	46.0				Wet @ FO						
===========	UZ.U	40.0				Wet @ 52' (1 gpm)						
						,						
=========					nale, Dark Gray							
				(with	h sandy sections)							
=========	FO 0	7.0										
	59.0	7.0	60									
				Upper Fr	eeport Coal (E) - 32.0"							
	62.0	3.0										
=========												
=======================================												
=======												
===========			70		nale, Dark Gray h sandy sections)							
=======================================			//	(WILL	sandy socions;							
=========												
========												
	76.0	14.0			Limestone							
00000000000000000000000000000000000000	77.0	1.0										
========					hale, Dark Gray h sandy sections)							

										Page 2 of	2
Hole No.:			RR-28-18	Operation Nan	ne :			Mine 78	Surface No	o. 3 Mine	
Surface Elevation	on:		1988.5	Method of Dril				Rotary A	ir		
Bottom of Coal	Elevations:		ort Coal - 1926.7					08/14/18			
		Lower Freep	ort Coal - 1869.5					G.R. Toy	Drilling		
Static Water Ele	vations	Not Recorded	_	Logged By: Township:	-			Berwind Paint			
and Date Measu		Not recorded	-	County:				Somerse	t		
			-	Quadrangle:				Windber			
			_	Laboratory:				N/A			
Surveyed by: _		wind	Method: _	Rotary Air Grid Coordina		Northing_	333,		Easting	1,673	
Remarks:	N	one		Latitude:	40° 14'	39.95"	Lo	ngitude:	78-	48' 27.5	08"
Graphic Log	Depth	Thickness	Scale 1" = 10'	Lithologic Description: rock type, weathering, color, fossils, carbonate minerals concentrations, pyrite, etc.	Water Conditions	Munsell Color Code	Ove OBA Sample	rburden An Log Interval	alysis Logs % Total Sulfur	Fizz Rating	NP
							-		<u>'</u>		
=======================================											
========											
			00								
			90								
=======================================											
=======================================				Shale, Dark Gray							
=======================================				(with hard sandy streaks)							
			100								
=======================================											
========											
=======================================											
=======================================											
			110								
========	440.0										
=========	116.0 117.0	39.0 1.0	<del>                                     </del>	Lower Freeport Coal (D) - 5.0"	+						
	118.0	1.0		Shale, Dark Gray							
==========	119.0 120.0	1.0 1.0	120	Lower Freeport Coal (D) - 6.0" Shale, Dark Gray	4						
	120.0	1.0	120	onac, bark oray	1						
			130								
			150								

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Hole No.:			RR-31-18		Operation Name	e:			Mine 78	Surface N	o. 3 Mine	
Surface Elevati			1899.0	1070 5	Method of Drilli	ng:			Rotary A			
Bottom of Coal	Elevations:		ning Coal (C') -		Date Drilled: Drilled By:				09/04/18 G.R. Toy			
			ning Coal (B) - 1		Logged By:				Berwind	Dilling		
			, ,		Township:				Paint			
Static Water Ele		Not Recorded			County:				Somerse	t		
and Date Measi	ırea				Quadrangle: Laboratory:				Windber N/A			
Surveyed by:	Bei	wind	Method:	Rotary Air	Grid Coordinate	es	Northing	332,		Easting	1,673	,787
Remarks:	N	one			Latitude:	40° 14'	29.52"	Lo	ngitude:	78°	48' 20.6	0"
		T	I I	Lithologic Desc	cription: rock type,			Ove	burden An	alysis Logs		
Graphic Log	Depth	Thickness	Scale 1" = 10'	weathering, colo	r, fossils, carbonate trations, pyrite, etc.	Water Conditions	Munsell Color Code	OBA Sample	Log Interval	% Total Sulfur	Fizz Rating	NP
(11111111111111111111111111111111111111								oup.o	to.va.	- Junui	raumg	
	3.0	3.0		Clay	r, Brown							
==========												
				Snale, E	Brown (soft)							
=========												
=======			10			Water @ 10'						
=========				<u>.</u>		Damp						
				Shale,	Dark Gray							
=========												
=========	16.0	13.0		Upper Kittanning C	oal Top Split (C') - 2.0"							
				Sandstone	e, Gray (hard)							
	19.0	3.0			-,, ()							
	21.0	2.0	20	Upper Kittannir	ng Coal (C') - 17.0"							
=========	21.0	2.0										
=========				Shale Da	rk Gray (soft)							
				Oliale, Da	ik Gray (Soit)							
========												
			30									
=========			30	Shale	Gray (soft)							
	33.0	12.0		Silale,	Gray (SOIL)							
(((((((((((((((((((((((((((((((((((((((	33.0	12.0		Clay	, Brown							
//////////////////////////////////////	35.0	2.0		Ciay	, blown							
=========												
=========												
=========			40									
=======================================				Shala C	ray & Brown							
=========					dy sections)							
=======================================												
=========												
=======================================												
=========												
========	51.0	16.0	50	Shale,	Dark Gray							
	01.0	10.0										
			60									
			55	Sandstone	e, Gray (hard)							
	70.0	19.0	70									
=======================================												
==========												
=======================================					Dark Gray							
=========					dy sections) par @ 76')							
=======================================				(2341 0	. 5 .,							

											Page 2 of	2
Hole No.:			RR-31-18		Operation Name	e:			Mine 78	Surface No	o. 3 Mine	
Surface Elevation			1899.0		Method of Drilli				Rotary A	ir		
Bottom of Coal	Elevations:		ning Coal (C') -		Date Drilled:				09/04/18			
			nning Coal (C) -		Drilled By: Logged By:				G.R. Toy Berwind	Drilling		
		Lower Kittan	ining Coar (b) -	1731.3	Township:				Paint			
Static Water Ele	vations	Not Recorded	_		County:				Somerse	:t		
and Date Measu	ıred				Quadrangle:				Windber			
Surveyed by:	Re	rwind	Method:	Rotary Air	Laboratory: Grid Coordinate	26	Northing	332,	N/A 606	Easting	1,673	787
Remarks:		lone			Latitude:	40° 14'			ngitude:		48' 20.6	
_			1							abada Lasa		
Graphic Log	Depth	Thickness	Scale 1" = 10'	weathering, c	Description: rock type, color, fossils, carbonate	Water Conditions	Munsell	OBA	Log	alysis Logs % Total	Fizz	NP
=======================================		+			centrations, pyrite, etc.		Color Code	Sample	Interval	Sulfur	Rating	
========					ale, Dark Gray sandy sections)							
	83.0	13.0		•	, ,							
				Sands	stone, Gray (hard)							
=========	89.0	6.0	90									
=========			90									
========												
=========												
========												
=======================================					ale, Dark Gray sandy sections)							
				(With	sandy sections)							
=======================================			100									
========												
=======================================												
	104.0	15.0										
				Middle Kitta	anning Coal (C) - 32.0"							
	107.0	3.0			- '.'							
==========												
========			110									
=======================================												
=======												
=========												
=======												
=========												
=======												
=========			120									
=========												
				Sha	ale, Dark Gray							
=========				(with ha	ard sandy sections)							
========				frac	ctured @ 126')							
=======================================			130									
=======			100									
=======================================												
=======================================												
==========												
=======================================												
=======			140									
=======================================												
=========												
=======================================	145.0	38.0										
	140.0	36.0										
	148.0	3.0		Lower Kitta	anning Coal (B) - 30.0"							
	1 <del>4</del> 0.U	3.0										
=======================================			150									
=======================================												
=======================================					Shale							
=======================================												
=========		1	1									

											Page 1 of	3
Hole No.:			RR-33-18		Operation Nam	٥.			Mine 78	Surface N	0.3	
Surface Elevati	on:		1903.0		Method of Drilli				Rotary A		0. 3	
Bottom of Coal		Upper Kittani	ning Coal (C') -	1854.2	Date Drilled:				09/24/18			
			nning Coal (C) -		Drilled By:				G.R. Toy	/ Drilling		
			ning Coal (B) - 1	1774.0	Logged By:				Berwind			
		Clarion Coal	(A) - 1/35.2		_ Township: County:				Paint Somerse	at .		
Static Water Ele	evations	Not Recorded			Quadrangle:				Windber			
and Date Meas					Laboratory:				N/A			
Surveyed by:		wind	Method:	Rotary Air	Grid Coordinate		Northing	332,		Easting	1,673	
Remarks:	No	one			Latitude:	40° 14'	32.88"	Lo	ngitude:	78°	48' 25.9	15"
				Lithologic	Description: rock type,			Over	rburden Ar	alysis Logs	<u> </u>	
Graphic Log	Depth	Thickness	Scale 1" = 10'	weathering,	color, fossils, carbonate ncentrations, pyrite, etc.	Water Conditions	Munsell Color Code	OBA Sample	Log Interval	% Total Sulfur	Fizz Rating	NP
ANTANIANIANIANIANIANIANIANIANIANIANIANIANIA				C	Clay, Brown Slay, Dark Gray							
11111111111111111111111111111111111111			10									
(1111111111111111111111111111111111111	13.0	13.0			Clay, Brown							
========	13.0	13.0										
=======================================					Shale, Brown							
	17.0	4.0										
(11111111111111111111111111111111111111	19.0	2.0			Clay, Brown							
			20									
					Shale, Brown							
========					h sandy sections)							
=======================================												
========												
=======================================			30									
========												
=======================================												
==========												
				S	hale, Dark Gray							
=========				(wit	h sandy sections)							
=======			40									
=========												
	46.0	27.0										
	49.0	3.0		Upper Kit	tanning Coal (C') - 34.0"							
	50.0	1.0	50	S	hale, Dark Gray							
//////////////////////////////////////	51.0	1.0			Clay, Gray							
=======================================												
=======================================												
========												
			60									
=======================================					Shale, Gray							
========				(with h	nard sandy sections)							
			70									
=======================================												
========												
=======================================												
========												
=======================================					hale, Dark Gray nard sandy sections)							
		1 1	ı I	(	. ,					ı	i l	

											Page 2 of	3
											rage 2 Ui	3
Hole No.:			RR-33-18		Operation Nam	ne :			Mine 78	Surface N	o. 3	
Surface Elevati	on:		1903.0		Method of Drill				Rotary A			
Bottom of Coal		Upper Kittan	ning Coal (C') -	1854.2	Date Drilled:				09/24/18			
		Middle Kittan	ning Coal (C) -	1813.0	Drilled By:				G.R. To	y Drilling		
			ning Coal (B) - 1	774.0	Logged By:				Berwind			
		Clarion Coal	(A) - 1735.2		Township:				Paint			
					County:				Somerse			
Static Water Ele		Not Recorded	-		Quadrangle:				Windber			
and Date Measi				D. t Air	Laboratory:			000	N/A		4.07	0.070
Surveyed by: Remarks:	Ber	wind	Method:	Rotary Air	Grid Coordinat		Northing	332,		Easting	48' 25.9	3,376
Remarks:					Latitude:	40° 14'	32.88	LO	ngitude:		48 25.	15
1				Lithologic I	Description: rock type,	I		Ove	rburden Aı	nalysis Logs		
Graphic Log	Depth	Thickness	Scale 1" = 10'	weathering,	color, fossils, carbonate	Water Conditions	Munsell	OBA	Log	% Total	Fizz	NP
			1 - 10	minerals cor	ncentrations, pyrite, etc.	Conditions	Color Code	Sample	Interval	Sulfur	Rating	_ NF
=========												
=========												
				Sh	nale, Dark Gray							
=======				(with ha	ard sandy sections)							
=========												
	88.0	37.0										
				Middle Kitt	tanning Coal (C) - 18.0"	1						
	90.0	2.0	90	madio rate		4						
==========												
=========												
=======						1			[			
									[			
========												
			100									
========												
=========				Sh	nale, Dark Gray							
				(with ha	ard sandy sections)							
			110									
==========												
========												
=========												
========			400									
==========			120									
=========												
========												
========												
	126.0	36.0										
		73.0				†						
				Lower Kitta	anning Coal (B) - 37.0"							
=========	129.0	3.0	130			1			[			
=========			100			1			[			
									[			
========												
=======												
=======												
========												
=========			140									
========												
========												
=========												
=========				Sh	nale, Dark Gray	1			[			
========												
									[			
=========						1			[			
=========			150			1			[			
						1			[			
						1			[			
==========									[			
========												
=======						1			[			
=========						1			[			
=========						1			[			
		1				1			1			

											Page 3 of	3
											1 age 5 of	3
Hole No.:			RR-33-18		Operation Nam					Surface N	o. 3	
Surface Elevati			1903.0		Method of Drill	ing:			Rotary A			
Bottom of Coal	Elevations:		ning Coal (C') -		Date Drilled:				09/24/18			
			nning Coal (C) - ning Coal (B) - 1		Drilled By: Logged By:				G.R. Toy Berwind	Drilling		
		Clarion Coal			Township:				Paint			
					County:				Somerse	et		
Static Water Ele		Not Recorded			Quadrangle:				Windber			
and Date Meas					Laboratory:				N/A		4.070	
Surveyed by: Remarks:		wind one	Method:	Rotary Air	Grid Coordinat Latitude:	es 40° 14'	Northing	332,	ngitude:	Easting	1,673 48' 25.9	
itemarks.	140	one			Latitude.	40 14	32.00	LO	ngituue.		40 20.8	55
Graphic			Scale		Description: rock type,	Water				alysis Logs		
Log	Depth	Thickness	1" = 10'	weathering,	color, fossils, carbonate ncentrations, pyrite, etc.	Conditions	Munsell Color Code	OBA Sample	Log Interval	% Total Sulfur	Fizz Rating	NP
=========				millerais coi	icentrations, pyrite, etc.		00.0. 0000	Janipie	interval	Juliui	itating	
========												
=======================================				Sh	nale, Dark Gray							
					, - ,							
=======================================	167.0	20.0										
	167.0 168.0	38.0 1.0		Claric	on Coal (A) - 10.0"							
=======================================			170									
========												
==========												
=========												
=======			180									
=======================================												
				Sh (with h	nale, Dark Gray nard sandy streaks)							
=========				(with	iara sariay sa cano,							
=======================================												
			190									
=======================================												
========												
=======================================												
=========	200.0	32.0	200									
			210									
			2.10									
			220									
			230									
		1	ا میں ا			l			I			

										Page 1 of	3	
		RR-36-18 1925.0 Lower Freeport Coal (D) - 1884.2										
Hole No.:					Operation Name					Surface N	o. 3 Mine	
Surface Elevati Bottom of Coal		Lower Freen		384 2	Method of Drilli Date Drilled:	ng:			Rotary A 10/16/18			
Dottom of God	Liovationo.		ning Coal (C') -		Drilled By:				G.R. Toy			
		Middle Kittar	nning Coal (C) -	1800.0	Logged By:				Berwind			
			ning Coal (B) -	1761.2	Township:				Paint			
Static Water El	avetions.	Clarion Coal Not Recorded	(A) - 1722.5		County:				Somerse Windber	t		
and Date Meas		Not Recorded	-		Quadrangle: Laboratory:				N/A			
Surveyed by:		wind	Method:	Rotary Air	Grid Coordinate	es	Northing	333,		Easting	1,673	,069
Remarks:	No	one	•		Latitude:	40° 14'	37.02"	Lo	ngitude:	78°	48' 29.9	7"
				l ithe lesie	Description, reals to me		ı	Over	rhurdon An	alysis Logs		
Graphic Log	Depth	Thickness	Scale 1" = 10'	weathering,	Description: rock type, color, fossils, carbonate ncentrations, pyrite, etc.	Water Conditions	Munsell Color Code	OBA Sample	Log Interval	% Total Sulfur	Fizz Rating	NP
///////////////////////////////////////					Clay, Brown							
//////////////////////////////////////	3.0	3.0			·							
	4.0	1.0		Shale, I	Dark Gray / Clay Mix							
//////////////////////////////////////												
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					Clay, Brown							
	9.0	5.0										
========	5.0	0.0	10									
=========												
=========												
=======================================												
========				Sha	Shale, Brown & Gray							
=======================================			20									
========												
==========												
=========												
===========												
			30									
			- 50									
=========				Sh	nale, Dark Gray							
==========					(with							
========												
===========												
	39.0	30.0	40									
	41.0	2.0	40		eeport Coal (D) - 27.0"							
				Sh	nale, Dark Gray	Water at 41'						
===========						2 gpm						
========												
=======================================												
=======================================			50									
			50		21							
========					Shale, Gray ard sandy sections)							
============				·								
=========												
=======================================			60									
=========												
=======================================												
=======================================				Qł.	nale, Dark Gray							
			70		ard sandy sections)							
========												
=======================================	78.0	37.0										
	70.0	31.0		I Innas Kitt	anning Coal (C') - 44.0"							

											Page 2 of	3
Hole No.:			RR-36-18		Operation Nam	ne ·			Mine 78	Surface No	o 3 Mine	
Surface Elevati	on:		1925.0		_ Method of Drill				Rotary A		5. 5 WIII C	
Bottom of Coal		Lower Freep	ort Coal (D) - 18	884.2	Date Drilled:	9.			10/16/18			
		Upper Kittan	ning Coal (C') -	1842.8	Drilled By:				G.R. Toy	Drilling		
			nning Coal (C) -		_ Logged By:				Berwind			
			ning Coal (B) -	1/61.2	_ Township: County:				Paint Somerse	+		
Static Water Ele	evations	Not Recorded	(A) - 1722.3		_ Quadrangle:				Windber	ι		
and Date Measi		Hot Hoodidad	-		_ Laboratory:				N/A			
Surveyed by:		wind	Method:	Rotary Air	Grid Coordinat	es	Northing	333,		Easting	1,673	3,069
Remarks:	No	one			Latitude:	40° 14'	37.02"	Lo	ngitude:	78°	48' 29.9	97"
		1				1		•	-ll <b>A</b>	-11-1		
Graphic Log	Depth	Thickness	Scale 1" = 10'	weathering,	Description: rock type, color, fossils, carbonate encentrations, pyrite, etc.	Water Conditions	Munsell Color Code	OBA Sample	Log Interval	alysis Logs % Total Sulfur	Fizz Rating	NP
	82.0	2.0		Upper Ki	ttanning Coal (C') 44.0"							
	02.0	2.0				+						
========												
========												
=============			90	s	hale, Dark Gray							
=========												
=========	96.0	14.0										
			100									
				San	dstone, Hard Gray							
	100.0	12.0										
=========	109.0	13.0	110									
				s	hale, Dark Gray							
					th sandy sections)							
==========	114.0	5.0										
				San	dstone, Hard Gray							
			120	•	•							
	404.0	40.0										
	124.0 125.0	10.0		Middle Kit	ttanning Coal (C) - 12.0"							
========						•						
=======================================												
			130									
=========												
=========												
=========												
=========			140									
				1								
========					hale, Dark Gray							
=========				(wit	th sandy sections) (caved @ 150')							
				]	· ·							
==========												
			150									
==========												
=======================================												
		1	160			1						

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											. ago o o.	ŭ
Hole No.:			RR-36-18		Operation Nam	ne :			Mine 78	Surface N	o. 3 Mine	
Surface Elevati	ion:		1925.0		Method of Drill				Rotary A	ir		
<b>Bottom of Coal</b>	l Elevations:	Lower Freep	ort Coal (D) - 18	384.2	Date Drilled:				10/16/18	}		
		Upper Kittan	ning Coal (C') -	1842.8	Drilled By:				G.R. Toy	/ Drilling		
			nning Coal (C) -		Logged By:				Berwind			
		Lower Kittan	ning Coal (B) -	1761.2	Township:				Paint			
			l (A) - 1722.5		County:				Somerse			
Static Water El		Not Recorded			Quadrangle:				Windber			
and Date Meas					Laboratory:				N/A			
Surveyed by:		wind	Method:	Rotary Air	Grid Coordinat		Northing	333,		Easting	1,673	
Remarks:	No	one			Latitude:	40° 14'	37.02"	Lo	ngitude:	78°	48' 29.9	7"
		I	1	Lithologic	Description: rock type,	1		Ove	rburden Ar	nalysis Logs		
Graphic	Depth	Thickness	Scale		color, fossils, carbonate	Water Conditions	Munsell	OBA	Log	% Total	Fizz	ND
Log			1" = 10'	minerals co	ncentrations, pyrite, etc.	Conditions	Color Code	Sample	Interval	Sulfur	Rating	NP
	161.0	36.0		Sh	nale, Dark Gray							
	162.0	1.0		Lower Kitt	tanning Coal (B) - 33.0"							
=========	163.0	1.0				†						
=========												
========												
			170									
========												
=======================================						1						
			180									
			100	Sh	nale, Dark Gray							
					•							
			190									
			190									
========												
=========	198.0	35.0				1						
			000									
			200	Claric	on Coal (A) - 42.0"							
	202.0	4.0										
========	203.0	1.0			Shale							
			210									
			220									
			220									
						1						
			220									
			230			1						
						1						
						1						
						1						
						1						
			1			1						

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Hole No.:			RR-39-18		Operation Nam	e:			Mine 78	Surface N	o. 3 Mine	
Surface Elevation:  Bottom of Coal Elevations: Middle			1833.0		Method of Drilli				Rotary A		0. 0 1411110	
Bottom of Coal	Elevations:		nning Coal (C) -		Date Drilled:				11/12/18			
		Lower Kittan	ning Coal (B) - 1	1762	Drilled By:				G.R. Toy	Drilling		
Static Water Ele	evations	Not Recorded			Logged By: Township:				Berwind Paint			
and Date Measi					County:				Somerse	ŧ		
					Quadrangle:				Windber			
				D. t A.'	_ Laboratory:				N/A		4.074	475
Surveyed by: Remarks:		rwind one	Method:	Rotary Air	_ Grid Coordinat Latitude:	es 40° 14'	Northing	331,	ngitude:	Easting 789	1,674 48' 11.6	
rtemarks.		Offic			_ Latitude.	40 14	22.00		ngituus.		40 11.0	
Graphic	Depth	Thickness	Scale		Description: rock type, color, fossils, carbonate	Water	Munsell	Ove	rburden Ar Log	alysis Logs % Total	Fizz	
Log	2000	1	1" = 10'		ncentrations, pyrite, etc.	Conditions	Color Code	Sample	Interval	Sulfur	Rating	NP
(1111111111111111111111111111111111111												
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,												
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,												
///////////////////////////////////////												
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					Clay, Brown							
//////////////////////////////////////												
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,												
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			10									
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,												
///////////////////////////////////////	12.0	12.0										
=========											[	
=========												
========												
========				S	hale, Dark Gray							
				(wit	h sandy sections)							
			20									
========												
=======												
========	23.0	11.0										
				Middle Kit	ttanning Coal (C) - 35.0"							
	26.0	3.0										
=========												
========			30									
==========												
=======												
			40									
========					hale, Dark Gray							
=======					nard sandy sections) ② 47' - no return after 57')							
=========				(maotarea (	g +1 - no return taker or )							
========												
=======												
========			50									
			30									
========												
=========												
=======												
========			60									
	61.0	35.0										
				S	andstone (hard)							
					(no return)							
	66.0	5.0			<u> </u>							
	68.0	2.0			Shale (no return)							
	55.5			l ower k	Kittanning Coal (B) - ?							
	71.0	3.0	70	Lowelr	(no return)							
	71.0	0.0										
=========											[	
					Shale							
					(no return)							
=======		1	1			l	1		1		( )	1

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Hole No.:			78-7-69		Operation Nar	me :			Mine 78	Surface No	o 3 Mine	
Surface Elevation	on:		2073.5		Method of Dril				Rotary A			
Bottom of Coal	Elevations:		ort Coal (E) - 19		Date Drilled:				09/19/69			
			ort Coal (D) - 19		Drilled By:					rilling Com		
		Upper Kittan	ning Coal (C') -	1853	Logged By:					rilling Com	pany	
Static Water Ele	vations	Not Recorded			Township:	-			Paint Cambria			
and Date Measi		Not Recorded			_ County: Quadrangle:				Windber			
una Bato mouot	ou				_ Laboratory:	-			N/A			
Surveyed by:	Be	rwind	Method:	Rotary Air	Grid Coordina	ites	Northing	333,		Easting	1,674	,604
Remarks:	N	one			Latitude:	40° 14'	35.85"	Lo	ngitude:	78°	48' 10.1	6"
		1		Lithalasia	: Description: rock type,	1	1	Ovo	rhurdon Ar	nalysis Logs		
Graphic Log	Depth	Thickness	Scale 1" = 10'	weathering,	, color, fossils, carbonate oncentrations, pyrite, etc.	Water Conditions	Munsell Color Code	OBA Sample	Log Interval	% Total Sulfur	Fizz Rating	NP
					Sandstone							
	83.0	28.0			Sandstone							
:=:=:=:=:=:=:=:=						1						
:=:=:=:=:=:=:=:=:=												
;=;=;=;=;=;=;=;=;= ;=;=;=;=;=;=;=;=												
:=:=:=:=:=:=:=:=												
:=:=:=:=:=:=:=:=:= :=:=:=:=:=:=:=:=:=			90									
:=:=:=:=:=:=:=:=:=:= :=:=:=:=:=:=:=:=:=			90									
:=:=:=:=:=:=:=:												
:=:=:=:=:=:=:=:=												
;=;=;=;=;=;=;=;=;= ;=;=;=;=;=;=;=;=					Sandy Shale							
:=:=:=:=:=:=:=:=												
:=:=:=:=:=:=:=:=:= :=:=:=:=:=:=:=:=:=												
:=:=:=:=:=:=:=:=:=:=												
:=:=:=:=:=:=:=			100									
:=:=:=:=:=:=:=:=:= :=:=:=:=:=:=:=:=:=												
:=:=:=:=:=:=:=:=												
:=:=:=:=:=:=:=:=:												
;=:=:=:=:=:=:=:= ;=:=:=:=:=:=:=:=	106.0	23.0										
	109.0	3.0		Upper Fi	reeport Coal (E) - 34.0"							
	100.0	0.0	110									
=======	440.0				Shale							
	112.0	3.0				-						
					Sandstone							
	116.0	4.0										
=======================================	110.0	4.0				-						
=======================================			120									
			120		Shale, Dark							
=========												
=======												
=======================================												
			46-									
=========			130									
========												
=======================================												
=======												
==========												
=========												
			140									
					Shale, Light							
========												
=======================================												
=======================================												
=======================================			150									
=======================================												
=======================================												
========												
	157.0	41.0										
	158.0	1.0		Lower F	reeport Coal (D) - 3.0"							
				<del></del>	Shale	1						

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		78-7-69 2073.5									. ago o o.	•
Hole No.:			78-7-69		Operation Nam	ie:			Mine 78	Surface N	o. 3 Mine	
Surface Elevati	ion:				Method of Drill	ing:			Rotary A			
Bottom of Coal	l Elevations:		reeport Coal (E		Date Drilled:				09/19/69			
			reeport Coal (E		Drilled By:					rilling Com		
		Upper k	Kittanning Coal	(C') - 1853	Logged By:					rilling Com	pany	
Statia Water El	avatiana	Not Decorded			Township:				Paint			
Static Water El and Date Meas		Not Recorded			County:				Cambria Windber			
and Date Meas	urea		-		Quadrangle: Laboratory:				N/A			
Surveyed by:	Ber	wind	Method:	Rotary Air	Grid Coordinat		Northing	333,		Easting	1 674	4,604
Remarks:		Willia	mounou.	rtotary 7 til	Latitude:	40° 14'			ngitude:		48' 10.	
											10 10.	
Graphic			Scale	Lithologic	Description: rock type,	Water			rburden Aı	nalysis Logs	1	
Log	Depth	Thickness	1" = 10'		color, fossils, carbonate	Conditions	Munsell	OBA	Log	% Total	Fizz	NP
 				minerals co	ncentrations, pyrite, etc.		Color Code	Sample	Interval	Sulfur	Rating	
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			170									
			170									
									1			
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	195.0	37.0										
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	221.0	2.0	220	Upper Kitt	anning Coal (C') - 18.0"				1			
<u> =:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:=:</u>	221.0											
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Hole No.:			78-7-69		Operation Nam	ie:			Mine 78	Surface No	o. 3 Mine	
Surface Elevati	on:		2073.5		Method of Drill				Rotary A	ir		
Bottom of Coal	ttom of Coal Elevations: Uppe			) - 1965.5	Date Drilled:				09/19/69			
			reeport Coal (D		Drilled By:					illing Com		
		Upper K	(ittanning Coal (	C') - 1853	Logged By: Township:				Tyger Dr Paint	illing Com	pany	
Static Water Ele	evations	Not Recorded			County:				Cambria			
and Date Meas		1101110001000	-		Quadrangle:				Windber			
			_		Laboratory:				N/A			
Surveyed by:	Ве	erwind	Method:	Rotary Air	Grid Coordinat		Northing _	333,		Easting	1,674	
Remarks:					Latitude:	40° 14'	35.85"	Lo	ngitude:	78°	48' 10.1	6"
		т т		Lithologic [	Description: rock type,			Ove	rburden An	alysis Logs		
Graphic Log	Depth	Thickness	Scale 1" = 10'	weathering, o	color, fossils, carbonate	Water Conditions	Munsell	OBA	Log	% Total	Fizz	NP
:=:=:=:=:=:=:=:=		+ +		minerals con	centrations, pyrite, etc.		Color Code	Sample	Interval	Sulfur	Rating	L
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			260									
			270									
			2.0									
			200									
			280									
			290									
			300									
			310									
			010									
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										Page 1 of	2
Hole No.:			OB-4	Operation Nan	ne :			Mine 78	Surface N	o. 3 Mine	
Surface Elevati			2061.5	Method of Drill	ling:			Rotary A			
Bottom of Coal	Elevations:	Upper Fi	reeport Coal (E)	- 1985.5 Date Drilled:  Drilled By:				04/14/20 Holt Drill			
				Logged By:				Holt Drill			
Static Water Ele		Not Recorded		Township:				Paint			
and Date Meas	urea			County: Quadrangle:				Somerse	PT		
				Laboratory:					al Analysis	Lab., Inc	
Surveyed by:		MC	Method:	Rotary Air Grid Coordina		Northing	332,		Easting	1,675	
Remarks:	N	one		Latitude:	40° 14'	27.16"	Lo	ngitude:		47' 57.4	·8 <sup>··</sup>
Graphic Log	Depth	Thickness	Scale 1" = 10'	Lithologic Description: rock type, weathering, color, fossils, carbonate	Water Conditions	Munsell	OBA	Log	alysis Logs % Total	Fizz	NP
XXXXXXXXXXX				minerals concentrations, pyrite, etc.		Color Code	Sample	Interval	Sulfur	Rating	
XXXXXXXXXXXX 	2.0 3.0	2.0 1.0		Clay, Brown			1	0-3	0.03	None	-0.70
							2	3-6	0.01	None	-0.81
							3	6-9	0.00	None	0.59
			10				4	9-12	0.00	None	-0.14
				Sandstone, Brown			5	12-15	0.00	None	-0.34
							6	15-18	0.00	None	0.22
			20				7	18-21	0.00	None	7.84
	24.0	21.0					8	21-24	0.00	None	8.31
							9	24-27	0.00	None	1.38
============							10	27-30	0.00	None	1.46
			30	Shale, Brown			11	30-33	0.00	None	1.35
=======================================	34.0	10.0					12	33-36	0.01	None	0.42
				Sandstone, Brown			13	36-39	0.00	None	3.29
			40								
				Sandstone, Gray			14	39-42	0.05	None	1.97
								42-45	0.04	None	0.73
				Sandstone, Brown			16	45-48 48-51	0.05	None	-0.39 -0.17
			50		Water @ 52'					None	-0.17
					2-3 gpm		18	51-54	0.03	None	
				Sandstone, Gray			19	54-57	0.13	None	-0.03
			60				20	57-60	0.15	None	0.98
=======================================	62.0	28.0			-		21	60-63	0.99	None	10.47
=======================================				Shale, Gray			22	63-66	0.46	None	11.49
=======================================			70				23	66-69	0.22	None	25.90
=======================================	70.0	44.0		Shale, Dark			24	69-72	0.05	Slight	36.09
=======================================	73.0	11.0		Upper Freeport Coal (E) - 36.0"			25 26	72-73	3.47	None	-1.54
	76.0	3.0					27	76-77	0.06	None	11.71
				Sandstone, Gray			28	77-80	0.39	None	5.50

											Page 2 of	2
Hole No.:			OB-4		Operation Nam	ie:			Mine 78	Surface N	o. 3 Mine	
Hole No.: Surface Elevation: Bottom of Coal Elevations: Upper I			2061.5		Method of Drilli				Rotary A	ir		
Bottom of Coal Elevations: Upper F		eeport Coal (E)		Date Drilled:				04/14/20				
Static Water Elevations Not Recorded					Drilled By:				Holt Drill			
			-		Logged By:				Holt Drill	ing		
Static Water Ele		Not Recorded	-		Township: County:				Paint Somerse			
and Date Weast	ureu		-		Quadrangle:				Windber			
			-		Laboratory:					al Analysis	s Lab Inc	
Surveyed by:	R	RMC	Method:	Rotary Air	Grid Coordinate	es	Northing	332,		Easting	1,675	
Remarks:		lone	-		Latitude:	40° 14'			ngitude:		47' 57.4	
Graphic	Depth	Thickness	Scale	Lithologic Description weathering, color, fossi		Water	Munsell	OBA	rburden An Log	alysis Logs % Total	Fizz	
Log	Бери	Tillokiloss	1" = 10'	minerals concentration:		Conditions	Color Code	Sample	Interval	Sulfur	Rating	NP
	81.0	5.0		Sandstone, Gr	ray			29	80-81	0.28	None	4.97
			90									
			100									
			110									
			120									
			130									
			140									
			150									
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