



ANDALEX
RESOURCES, INC.

P.O. Box 910, East Carbon, Utah 84520
Telephone (435) 888-4000 Fax (435) 888-4002

Utah Division of Oil, Gas & Mining
Utah Coal Program
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, UT 84114-5801

February 14, 2019

Attn: Steve Christensen
Permit Supervisor

Re: Andalex Resources, Inc. C/007/019
T19-001 Annual Report

Dear Mr. Christensen,

Please find attached everything needed to complete the annual reports for 2018.

If you have any questions, or need any additional information regarding this renewal, please contact me directly at 435-888-4000.

Sincerely,

Karin Madsen
Engineering Tech
UtahAmerican Energy, Inc.

2018 ANNUAL REPORT

Submit the completed document and any additional information identified to the Division by March 31, 2019.

GENERAL INFORMATION

Company Name	Andalex Resources Inc	Mine Name	Centennial Mine
Permit Number	C/007/0019	Permit Expiration Date	1-4-22
Operator Name	Andalex Resources	Phone Number	+1 (435) 888-4000
Mailing Address	PO Box 910	Email	kmadsen@coalsource.com
City	East Carbon		
State	UT	Zip Code	84520

DOGMA File Location or Annual Report Location

Excess Spoil Piles	<input type="checkbox"/> Required <input checked="" type="checkbox"/> Not Required	
Refuse Piles	<input type="checkbox"/> Required <input checked="" type="checkbox"/> Not Required	
Impoundments	<input checked="" type="checkbox"/> Required <input type="checkbox"/> Not Required	Annual pond certifications included
Other:		

OPERATOR COMMENTS

Tower Mine was inactive during 2018

REVIEWER COMMENTS

Met Requirements Did Not meet Requirements

FUTURE COMMITMENTS AND CONDITIONS

The following commitments are not required for the current annual report year, but will be required by the permittee in the future as indicated by the "status" field. These commitments are included for information only, and do not currently require action. If you feel that the commitment is no longer relevant or needs to be revised, please contact the Division.

Title: SAGE GROUSE NEST SITE EVALUATION

Objective: Prior to development of the well site, a Sage Grouse nest site evaluation will be conducted by a knowledgeable wildlife biologist. If nests are located, an alternative drill site location will be determined.

Frequency: Based on the need to drill additional de-gas wells.

Status: Required in future if new de-gas wells are proposed.

Reports: Send with application

Citation: Appendix X, Chapter 3, page 3-5, paragraph 1

Title: RECLAMATION SUCCESS

Objective: Determine reclamation success.

Frequency: Reclaimed areas will be qualitatively monitored monthly for the first two growing seasons following reclamation. Quantitative veg analysis will be completed in years 5, 9 and 10. In year 7, a consultation with DOGM will determine if an additional inventory might be necessary.

Status: Check at reclamation.

Reports: When monitoring commences.

Citation: Chapter 3, page 3-17

Title: RECLAMATION ENHANCEMENT MEASURES

Objective: Andalex will consult with the Division of Wildlife Resources, at the time of final reclamation, to determine exactly what reclamation designs, planting arrangements, and artificial structures would best enhance wildlife habitat.

Frequency: Once

Status: Will be required prior to final reclamation

Reports: Report reclamation plans to Division for incorporation into MRP

Citation: Volume 1, Chapter 3, page 3-23, paragraph 1

Title: SEALING OF WELLS

Objective: Permanent closure of wells using measures required by the Division to prevent access and contamination of groundwater.

Frequency: When wells are no longer needed.

Status: Throughout mining

Reports: Report in Annual report the year when wells are completed.

Citation: Gob Gas Vent Wells: Appendix X R645-301.542.700 All other exploration and water wells: MRP - 301.529.100 301.755

REPORTING OF OTHER TECHNICAL DATA

Please list other technical data or information that was not included in the form above, but is required under the approved plan, which must be periodically submitted to the Division.

Please list attachments:

REVIEWER COMMENTS

Met Requirements

Did Not Meet Requirements

MAPS

Copies of mine maps, current and up-to-date, are to be provided to the Division as an attachment to this report in accordance with the requirements of R645-301-525.240. The map copies shall be made in accordance with 30 CFR 75.1200 as required by MSHA. Mine maps are not considered confidential.

Map Name	Map Number	Included		Confidential	
		Yes	No	Yes	No
Mine Map	Included	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

REVIEWER COMMENTS Met Requirements Did Not Meet Requirements

Permit Number	C/007/0019	Report Date	10-25-18
Mine Name	Tower Mine		
Company Name	UtahAmerican Energy, Inc.		
Impoundment Identification	Impoundment Name	B, C & E	
	Impoundment Number	None	
	UPDES Permit Number	UTG040029	
	MSHA ID Number	NA	

IMPOUNDMENT INSPECTION

Inspection Date	10-24-18		
Inspected By	Karin Madsen		
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	4th Quarter		

1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.

Ponds B, C & E

No instability, structural weaknesses, or visible hazards were observed at time of inspection.

Required for an impoundment which functions as a SEDIMENTATION POND.	<p>2. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.</p> <p style="text-align: center;">Sediment Elevations (Per Approved MRP):</p> <table style="width:100%; border: none;"> <tr> <td style="width:33%; text-align: center;">Cell B1 (South Cell)</td> <td style="width:33%; text-align: center;">Cell B2</td> <td style="width:33%; text-align: center;">Cell B3</td> </tr> <tr> <td style="text-align: center;">Max Water Level 7077'</td> <td style="text-align: center;">60% 7081'</td> <td style="text-align: center;">Max Water and Sed. Level 7087'</td> </tr> <tr> <td style="text-align: center;">Cell B4 (North Cell)</td> <td style="text-align: center;">Pond C</td> <td style="text-align: center;">Pond E</td> </tr> <tr> <td style="text-align: center;">Max Water and Sed Level 7091'</td> <td style="text-align: center;">60% 7046.9' 100% 7048.7'</td> <td style="text-align: center;">60% 6947.5' 100% 6949.3'</td> </tr> </table> <p>Cleaning of all B Cells must take place when sediment level reaches 7081' in Cell B2.</p> <p>See section 5 for current sediment levels.</p>	Cell B1 (South Cell)	Cell B2	Cell B3	Max Water Level 7077'	60% 7081'	Max Water and Sed. Level 7087'	Cell B4 (North Cell)	Pond C	Pond E	Max Water and Sed Level 7091'	60% 7046.9' 100% 7048.7'	60% 6947.5' 100% 6949.3'
Cell B1 (South Cell)	Cell B2	Cell B3											
Max Water Level 7077'	60% 7081'	Max Water and Sed. Level 7087'											
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Max Water and Sed Level 7091'	60% 7046.9' 100% 7048.7'	60% 6947.5' 100% 6949.3'											

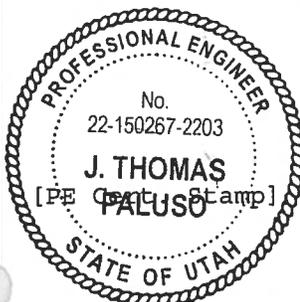
CERTIFIED REPORT

IMPOUNDMENT EVALUATION (If NO, explain under Comments)	YES	NO
1. Is impoundment designed and constructed in accordance with the approved plan?	XXXXX	
2. Is impoundment free of instability, structural weakness, or any other hazardous condition?	XXXXX	
3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection?	XXXXX	

COMMENTS AND OTHER INFORMATION

Pond as built drawings were reviewed in 2/2014 to confirm clean-out elevations and spillway elevations by RJM

Certification Statement:



I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized in the State of Utah to inspect and certify the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself or under my direction and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability in accordance with the Utah R645 Coal Mining Rules.

By: JOSEPH PALUSO
 (Full Name and Title)

Signature: J. T. Paluso Date: 10/30/18

P.E. Number & State: 22-150267-2203, UTAH

Gob Vent Hole Status, Centennial Mine 2018

The following report is for the Centennial Mine Gob Vent Hole (GVH) project. It is to be noted that the vertical CMP vent pipes present on most of the GVH sites are part of the collection system, which is the responsibility of OSO/Liberty Pioneer, as outlined in the Operating Agreement. The compressor station located adjacent to GVH pad #9 is also part of the collection system, and is a separate entity from the GVH Project.

GVH #1

Drilled in 2005. Because GVH #1 was never included in the Operating agreement, and this hole was not considered necessary for future ventilation of the mine operation, it was plugged and the surface pad was reclaimed in 2009. The vegetation inventory was conducted and the GVH hole can now qualify for Phase II Bond Release.

GVH #2

Never drilled, not permitted, no disturbance, eliminated from consideration.

GVH #3

Drilled in 2005. Currently capable of production. Hole has drill collar with valves, telemetry tower, three solar cells with controller box, lightning rod pole, vertical CMP vent and condenser-copper structure. Site has been reduced, top-soiled, pocked, fenced, and seeded.

GVH #4

Drilled in 2005. Hole has drill collar with valves, three solar cells with controller box, lightning pole, and condenser-cooler structure. Site has been reduced, top-soiled, pocked, fenced, and seeded.

GVH #5

Drilled in 2005. Because GVH #5 was never included in the agreement, and this hole was not considered necessary for future ventilation of the mine operation, it was plugged and the surface pad was reclaimed in 2009. The vegetation inventory was conducted and the GVH hole can now qualify for Phase II Bond Release.

GVH #5A

Drilled in 2006. Has a drill collar and a blind flange was installed in June 2018 to repair leak. Site has been reduced, top-soiled, pocked, fenced and seeded.

GVH #5B

Permitted but never drilled, no pad was ever created. Eliminated from consideration. However was considered in the bonding.

GVH #6

Drilled in 2005. Hole has drill collar with valves, vertical CMP vent, and condenser-cooler structure. Site has been reduced, fenced, top-soiled, pocked, and seeded. Site Was re-seeded in October 2018.

GVH #7

Drilled in 2006. Currently capable of production. Hole has drill collar and a blind flange was installed in June 2018 to repair leak. Has vertical CMP vent, and condenser-cooler structures. Site has been reduced, fenced, top-soiled, pocked, and seeded.

GVH #7A

Drilled in 2006 from GVH pad #7. On same pad as 7. Has drill collar with valves. Site has been fenced, reduced, top-soiled, pocked, and seeded.

GVH #8

Drilled in 2006. Hole has drill collar with valves. Site has been reduced, fenced, top-soiled, pocked, and seeded.

GVH #8A

Drilled in 2006. Currently capable of production. Hole has drill collar with valves, and vertical CMP drain. Site has been fenced, reduced, top-soiled, pocked, and seeded.

GVH #9

Drilled in 2006. Currently capable of production. Hole has drill collar and a blind flange was installed in June 2018 to repair leak. Has tvertical CMP drain, and condenser-cooler structures. Site has been fenced, top-soiled, pocked, and seeded.

GVH #10

Permitted but never drilled, no pad preparation. Eliminated from consideration, however was considered in the bonding.

GVH 10A

Permitted by never drilled, no pad preparation. Eliminated from consideration.

GVH #11

Drilled in 2008. Currently capable of production. Hole has drill collar with valves, condenser-cooler structure and vertical CMP drain. Site has been reduced, fenced, top-soiled, pocked, and seeded.

GVH #11A

Proposed, conditionally approved but never drilled. No bonding.

GVH #12

Drilled in 2008. This GVH is no longer needed for future ventilation and was never tied into the ventilation network: Plugged in July of 2014, as per the approved BLM plugging plan. The collar and all valves were removed and the pipe cut off at 18" below ground level. This GVH was fenced and re-seeded to augment existing vegetation in September of 2014. The vegetation inventory was conducted and the GVH can now qualify for Phase II Bond Release.

GVH #12A

Proposed, conditionally approved but never drilled. No bonding.

GVH #13

Drilled in 2008. This GVH is no longer needed for future ventilation and was never tied into the ventilation network: Plugged in July of 2014, as per the approved BLM plugging plan. The collar and all valves were removed and the pipe cut off at 18" below ground level. This GVH was fenced and re-seeded to augment existing vegetation in September of 2014. Before this site is eligible for Phase I Reclamation, the vertical CMP vent which is tied into the main pipeline needs to be removed. Once removed, the 10 year reclamation clock can start.

GVH #13A

Proposed, conditionally approved but never drilled. No bonding.

GVH #14

Drilled in 2008. This GVH is no longer needed for future ventilation and was never tied into the ventilation network: Plugged in July of 2014, as per the approved BLM plugging plan. The collar and all valves were removed and the pipe cut off at 18" below ground level. This GVH was fenced and re-seeded to augment existing vegetation in September of 2014. The vegetation inventory was conducted and the GVH can now qualify for Phase II Bond Release.

GVH #14A

Proposed, conditionally approved but never drilled. No bonding.

GVH #15

The drilling pad was prepared but the hole was never drilled. This GVH was reduced, fenced and re-seeded to augment existing vegetation in September of 2014. Before it is eligible for Phase I reclamation, the vertical CMP vent needs to be removed. Once removed, the 10 year reclamation clock can start.

GVH #15A

Proposed, conditionally approved but never drilled. No bonding.

GVH #16

The drilling pad was prepared but the hole was never drilled. This GVH was fenced and re-seeded to augment existing vegetation in September of 2014. Before it is eligible for Phase I reclamation, the vertical CMP vent needs to be removed. Once removed, the 10 year reclamation clock can start.

GVH #16A

Proposed, conditionally approved but never drilled. No bonding.

GVH #17

The drilling pad was prepared but the hole was never drilled. This GVH was reduced, fenced and re-seeded to augment existing vegetation in September of 2014. Before it is eligible for Phase I reclamation, the vertical CMP vent needs to be removed. Once removed, the 10 year reclamation clock can start.

TOWER RESOURCES, INC.
2018 RTK GPS SUBSIDENCE SURVEY

11/13/2018

STATION	NORTHING (FEET)	EASTING (FEET)	2003 ELEVATION	2007 ELEVATION	2008 ELEVATION	2009 ELEVATION	2010 ELEVATION	2011 ELEVATION	2012 ELEVATION	2013 ELEVATION	2014 ELEVATION	2015 ELEVATION	2016 ELEVATION	2017 ELEVATION	2018 ELEVATION	2017-2018	NOTES
Rebar on ridge	505.141.92	2,217.261.07	8,241.62	8,241.62	8,241.62	8,241.62	8,241.62	8,241.62	8,241.62	8,241.62	8,241.62	8,241.62	8,241.62	8,241.62	8,241.62	0.00	CONTROL
Yellow Rebar	507.073.59	2,223.128.18	8,534.90	8,534.90	8,534.90	8,534.90	8,534.90	8,534.90	8,534.90	8,534.90	8,534.90	8,534.90	8,534.90	8,534.90	8,534.90	0.00	CONTROL
S-10	507.824.28	2,217.196.61	8,594.59	8,594.59	8,594.59	8,594.59	8,594.59	8,594.59	8,594.59	8,594.59	8,594.59	8,594.59	8,594.59	8,594.59	8,594.59	0.00	CONTROL
S16	508.650.48	2,210.725.70	8,809.53	8,809.64	8,809.75	8,809.71	8,809.72	8,809.70	8,809.68	8,809.69	8,809.68	8,809.70	8,809.73	8,809.75	8,809.72	0.03	---
S17	508.190.63	2,213.802.51	8,624.48	8,624.43	8,624.43	8,624.43	8,624.43	8,624.45	8,624.46	8,624.46	8,624.46	8,624.46	8,624.45	8,624.46	8,624.48	-0.02	---
99-1	508.942.12	2,215.063.90	8,572.35	8,572.13	8,572.14	8,572.12	8,572.14	8,572.13	8,572.13	8,572.12	8,572.13	8,572.13	8,572.14	8,572.13	8,572.12	0.01	---
99-2	509.023.29	2,218.624.20	8,551.12	8,551.01	8,550.98	8,550.96	8,551.00	8,550.98	8,550.97	8,550.99	8,550.97	8,550.97	8,550.99	8,550.97	8,551.00	-0.03	---
S20	510.331.29	2,214.642.56	8,574.26	8,573.87	8,573.78	8,573.77	8,573.78	8,573.82	8,573.79	8,573.80	8,573.79	8,573.81	8,573.81	8,573.78	8,573.78	0.00	---
S21	510.581.75	2,214.956.87	8,489.90	8,489.22	8,489.35	8,489.39	8,489.48	8,489.45	8,489.45	8,489.41	8,489.42	8,489.41	8,489.44	8,489.42	8,489.43	-0.01	---
S32	509.739.02	2,218.933.12	8,548.93	8,548.80	8,548.81	8,548.79	8,548.77	8,548.80	8,548.81	8,548.81	8,548.82	8,548.81	8,548.82	8,548.83	8,548.80	-0.03	---
G-17	513.692.46	2,210.938.01	---	8,488.24	8,488.23	8,488.22	8,488.24	8,488.25	8,488.25	8,488.23	8,488.23	8,488.23	8,488.26	8,488.24	8,488.24	0.02	---
G-12	513.184.13	2,216.526.83	---	8,311.00	8,311.02	8,311.00	8,311.01	8,311.02	8,311.03	8,311.03	8,311.03	8,311.03	8,311.01	8,311.01	8,311.01	0.00	---
E1/4 36	513.118.57	2,214.340.00	---	8,280.66	8,280.65	8,280.61	8,280.61	8,280.64	8,280.64	8,280.62	8,280.62	8,280.59	8,280.60	8,280.62	8,280.65	-0.03	Section cor.
S1/4 36	510.454.70	2,211.696.79	---	8,606.46	8,606.43	8,606.44	8,606.43	8,606.43	8,606.43	8,606.43	8,606.44	8,606.40	8,606.38	8,606.41	8,606.42	-0.01	Section cor.
West Side Subsidence Line, Set in 2007																	
1	509.702.03	2,211.401.87	---	8,702.64	8,702.59	8,702.60	8,702.61	8,702.62	8,702.63	8,702.61	8,702.63	8,702.64	8,702.60	8,702.62	8,702.59	0.03	W. side line
2	509.802.00	2,211.401.17	---	8,693.70	8,693.69	8,693.69	8,693.69	8,693.67	8,693.68	8,693.70	8,693.68	8,693.68	8,693.66	8,693.71	8,693.70	0.01	W. side line
3	509.905.87	2,211.391.89	---	8,684.35	8,684.35	8,684.36	8,684.34	8,684.35	8,684.37	8,684.37	8,684.37	8,684.35	8,684.36	8,684.35	8,684.31	0.04	W. side line
4	510.003.89	2,211.387.55	---	8,673.73	8,673.77	8,673.77	8,673.75	8,673.75	8,673.78	8,673.75	8,673.78	8,673.77	8,673.74	8,673.74	8,673.76	-0.02	W. side line
5	510.100.53	2,211.381.55	---	8,663.92	8,663.94	8,663.94	8,663.92	8,663.94	8,663.92	8,663.91	8,663.92	8,663.92	8,663.93	8,663.90	8,663.93	-0.03	W. side line
6	510.205.72	2,211.424.42	---	8,646.43	8,646.50	8,646.49	8,646.51	8,646.53	8,646.54	8,646.52	8,646.54	8,646.56	8,646.55	8,646.59	8,646.59	0.00	W. side line
7	510.305.04	2,211.417.01	---	8,635.74	8,635.70	8,635.68	8,635.70	8,635.69	8,635.70	8,635.72	8,635.70	8,635.73	8,635.71	8,635.68	8,635.69	0.01	W. side line
8	510.401.40	2,211.415.19	---	8,625.82	8,625.81	8,625.80	8,625.81	8,625.80	8,625.83	8,625.81	8,625.83	8,625.77	8,625.79	8,625.78	8,625.80	-0.02	W. side line
9	510.505.66	2,211.402.20	---	8,614.38	8,614.39	8,614.39	8,614.38	8,614.38	8,614.39	8,614.37	8,614.39	8,614.39	8,614.40	8,614.37	8,614.40	-0.03	W. side line
10	510.608.91	2,211.401.63	---	8,603.45	8,603.45	8,603.46	8,603.45	8,603.47	8,603.46	8,603.47	8,603.46	8,603.48	8,603.51	8,603.50	8,603.49	0.01	W. side line
11	510.709.16	2,211.393.00	---	8,596.31	8,596.29	8,596.29	8,596.30	8,596.28	8,596.30	8,596.30	8,596.30	8,596.30	8,596.26	8,596.32	8,596.28	0.04	W. side line
12	510.798.94	2,211.380.99	---	8,588.76	8,588.74	8,588.72	8,588.72	8,588.75	8,588.73	8,588.73	8,588.73	8,588.73	8,588.72	8,588.74	8,588.73	0.01	W. side line
13	510.898.92	2,211.375.38	---	8,576.09	8,576.10	8,576.09	8,576.09	8,576.11	8,576.09	8,576.12	8,576.09	8,576.12	8,576.07	8,576.07	8,576.09	-0.02	W. side line
14	511.010.59	2,211.370.03	---	8,561.49	8,561.50	8,561.47	8,561.49	8,561.47	8,561.48	8,561.50	8,561.48	8,561.50	8,561.47	8,561.51	8,561.49	0.02	W. side line
15	511.112.19	2,211.366.93	---	8,548.80	8,548.83	8,548.81	8,548.81	8,548.82	8,548.80	8,548.83	8,548.81	8,548.80	8,548.81	8,548.82	8,548.79	0.03	W. side line
16	511.228.34	2,211.359.45	---	8,543.69	8,543.65	8,543.61	8,543.63	8,543.63	8,543.63	8,543.62	8,543.63	8,543.66	8,543.62	8,543.65	8,543.65	0.00	W. side line
17	511.338.04	2,211.366.01	---	8,542.64	8,542.59	8,542.57	8,542.60	8,542.59	8,542.58	8,542.57	8,542.58	8,542.59	8,542.57	8,542.56	8,542.57	-0.01	W. side line
18	511.437.15	2,211.398.56	---	8,535.12	8,535.08	8,535.06	8,535.10	8,535.08	8,535.09	8,535.07	8,535.09	8,535.08	8,535.05	8,535.05	8,535.07	-0.03	W. side line
19	511.553.98	2,211.419.93	---	8,526.12	8,526.05	8,526.02	8,526.04	8,526.05	8,526.03	8,526.06	8,526.03	8,526.06	8,526.07	8,526.04	8,526.01	0.03	W. side line
20	511.693.22	2,211.455.79	---	8,517.15	8,517.08	8,517.07	8,517.06	8,517.11	8,517.12	8,517.10	8,517.12	8,517.10	8,517.07	8,517.09	8,517.13	0.02	W. side line
21	511.807.12	2,211.469.85	---	8,512.56	8,512.50	8,512.49	8,512.47	8,512.52	8,512.50	8,512.50	8,512.50	8,512.53	8,512.52	8,512.54	8,512.54	0.00	W. side line
22	511.915.39	2,211.476.19	---	8,510.95	8,510.89	8,510.90	8,510.87	8,510.90	8,510.91	8,510.89	8,510.91	8,510.88	8,510.88	8,510.86	8,510.89	-0.03	W. side line
23	512.092.42	2,211.406.58	---	8,505.00	8,504.98	8,504.98	8,504.93	8,504.95	8,504.98	8,504.95	8,504.98	8,504.98	8,504.99	8,504.97	8,505.00	-0.03	W. side line
24	512.192.21	2,211.384.74	---	8,495.80	8,495.72	8,495.71	8,495.71	8,495.73	8,495.71	8,495.72	8,495.71	8,495.73	8,495.66	8,495.69	8,495.71	-0.02	W. side line
25	512.292.93	2,211.375.13	---	8,483.93	8,483.94	8,483.94	8,483.94	8,483.92	8,483.92	8,483.95	8,483.92	8,483.92	8,483.96	8,483.92	8,483.95	-0.03	W. side line
26	512.408.97	2,211.358.60	---	8,471.08	8,471.04	8,471.05	8,471.04	8,471.06	8,471.07	8,471.05	8,471.07	8,471.07	8,471.06	8,471.05	8,471.04	0.01	W. side line
27	512.515.37	2,211.308.35	---	8,462.95	8,462.90	8,462.89	8,462.91	8,462.92	8,462.90	8,462.91	8,462.90	8,462.93	8,462.88	8,462.90	8,462.87	0.03	W. side line
28	512.650.10	2,211.333.27	---	8,449.75	8,449.72	8,449.72	8,449.73	8,449.73	8,449.74	8,449.72	8,449.74	8,449.77	8,449.77	8,449.76	8,449.76	0.00	W. side line
29	512.873.07	2,211.295.54	---	8,430.09	8,430.05	8,430.03	8,430.06	8,430.04	8,430.04	8,430.06	8,430.04	8,430.05	8,430.07	8,430.07	8,430.04	0.03	W. side line
30	512.993.25	2,211.287.69	---	8,428.71	8,428.68	8,428.69	8,428.74	8,428.76	8,428.75	8,428.71	8,428.75	8,428.74	8,428.73	8,428.76	8,428.70	0.06	W. side line
31	513.091.16	2,211.285.96	---	8,427.18	8,427.16	8,427.15	8,427.18	8,427.20	8,427.20	8,427.19	8,427.20	8,427.21	8,427.20	8,427.18	8,427.16	0.02	W. side line
32	513.217.13	2,211.297.36	---	8,423.25	8,423.21	8,423.20	8,423.24	8,423.23	8,423.21	8,423.22	8,423.21	8,423.22	8,423.24	8,423.21	8,423.20	0.01	W. side line
33	513.353.03	2,211.313.87	---	8,425.43	8,425.38	8,425.38	8,425.40	8,425.39	8,425.40	8,425.41	8,425.40	8,425.40	8,425.38	8,425.37	8,425.38	-0.01	W. side line
34	513.491.93	2,211.317.92	---	8,407.84	8,407.78	8,407.79	8,407.80	8,407.79	8,407.79	8,407.78	8,407.79	8,407.79	8,407.81	8,407.77	8,407.80	-0.03	W. side line
35	513.607.49	2,211.335.06	---	8,406.22	8,406.17	8,406.17	8,406.18	8,406.18	8,406.16	8,406.16	8,406.16	8,406.16	8,406.17	8,406.19	8,406.15	0.04	W. side line
36																	

TOWER RESOURCES, INC.
2018 DIFFERENTIAL LEVEL SUBSIDENCE SURVEY

11/13/2018

STATION	NORTHING (FEET)	EASTING (FEET)	8/22/2005 ELEVATION	10/28/2006 ELEVATION	10/10/2007 ELEVATION	10/30/2008 ELEVATION	10/28/2009 ELEVATION	10/21/2010 ELEVATION	10/15/2011 ELEVATION	11/4/2012 ELEVATION	10/8/2013 ELEVATION	10/24/2014 ELEVATION	10/14/2015 ELEVATION	11/9/2016 ELEVATION	9/3/2017 ELEVATION	11/9/2018 ELEVATION	2017-2018	NOTES
Rebar on ridge	505,141.92	2,217,261.07	8,241.62	8,241.62	8,241.62	8,241.62	8,241.62	8,241.62	8,241.62	8,241.62	8,241.62	8,241.62	8,241.62	8,241.62	8,241.62	8,241.62	0.00	CONTROL
Yellow Rebar	507,073.59	2,223,128.18	8,534.90	8,534.90	8,534.90	8,534.90	8,534.90	8,534.90	8,534.90	8,534.90	8,534.90	8,534.90	8,534.90	8,534.90	8,534.90	8,534.90	0.00	CONTROL
S-10	507,824.28	2,217,196.61	8,594.59	8,594.59	8,594.59	8,594.59	8,594.59	8,594.59	8,594.59	8,594.59	8,594.59	8,594.59	8,594.59	8,594.59	8,594.59	8,594.59	0.00	CONTROL
1	511,963.35	2,216,981.20	8,509.59	8,509.63	8,509.51	8,509.33	8,509.30	8,509.29	8,509.30	8,509.31	8,509.30	8,509.30	8,509.31	8,509.30	8,509.30	8,509.30	0.00	1/2" rebar w/cap
2	512,062.12	2,216,965.01	8,503.78	8,503.80	8,503.70	8,503.54	8,503.49	8,503.47	8,503.45	8,503.45	8,503.45	8,503.46	8,503.46	8,503.46	8,503.45	8,503.46	-0.01	1/2" rebar w/cap
3	512,165.33	2,216,978.66	8,496.82	8,496.84	8,496.74	8,496.58	8,496.57	8,496.55	8,496.52	8,496.53	8,496.53	8,496.52	8,496.52	8,496.52	8,496.52	8,496.53	-0.01	1/2" rebar w/cap
4	512,263.52	2,217,010.76	8,486.13	8,486.14	8,486.04	8,485.87	8,485.90	8,485.89	8,485.87	8,485.87	8,485.88	8,485.88	8,485.89	8,485.89	8,485.89	8,485.89	0.00	1/2" rebar w/cap
5	512,367.50	2,217,038.78	8,473.91	8,473.89	8,473.81	8,473.67	8,473.69	8,473.67	8,473.66	8,473.67	8,473.68	8,473.67	8,473.67	8,473.66	8,473.65	8,473.65	0.00	1/2" rebar w/cap
6	512,490.58	2,217,143.42	8,461.52	8,461.51	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed
7	512,589.90	2,217,213.86	8,453.25	8,453.25	8,453.19	8,453.09	8,453.12	8,453.11	8,453.12	8,453.11	8,453.12	8,453.11	8,453.10	8,453.11	8,453.09	8,453.09	0.00	1/2" rebar w/cap
8	512,692.18	2,217,262.33	8,445.26	8,445.25	8,445.23	8,445.16	8,445.17	8,445.17	8,445.16	8,445.16	8,445.17	8,445.16	8,445.16	8,445.16	8,445.16	8,445.15	0.01	1/2" rebar w/cap
9	512,800.40	2,217,300.21	8,436.64	8,436.66	8,436.64	8,436.67	8,436.66	8,436.65	8,436.66	8,436.67	8,436.65	8,436.64	8,436.65	8,436.64	8,436.63	8,436.62	0.01	1/2" rebar w/cap
10	512,891.71	2,217,336.16	8,430.74	8,430.79	8,430.77	8,430.77	8,430.76	8,430.77	8,430.77	8,430.77	8,430.76	8,430.76	8,430.76	8,430.76	8,430.76	8,430.75	0.01	1/2" rebar w/cap
11	513,000.47	2,217,368.65	8,424.38	8,424.43	8,424.41	8,424.40	8,424.40	8,424.41	8,424.40	8,424.41	8,424.42	8,424.41	8,424.41	8,424.40	8,424.40	8,424.40	0.00	1/2" rebar w/cap
12	513,103.93	2,217,402.82	8,416.62	8,416.64	8,416.67	8,416.69	8,416.68	8,416.67	8,416.67	8,416.68	8,416.67	8,416.67	8,416.68	8,416.67	8,416.67	8,416.66	0.01	1/2" rebar w/cap
13	513,196.61	2,217,451.14	8,408.31	8,408.36	8,408.37	8,408.36	8,408.36	8,408.37	8,408.38	8,408.38	8,408.38	8,408.36	8,408.37	8,408.35	8,408.35	8,408.35	0.00	1/2" rebar w/cap
14	513,295.64	2,217,494.35	8,393.48	8,393.50	8,393.50	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed
15	513,371.68	2,217,541.37	8,380.48	8,380.51	8,380.50	8,380.51	8,380.52	8,380.52	8,380.53	8,380.52	8,380.50	8,380.51	8,380.51	8,380.50	8,380.50	8,380.50	0.00	1/2" rebar w/cap
16	513,462.85	2,217,588.68	8,368.30	8,368.34	8,368.36	8,368.35	8,368.35	8,368.34	8,368.34	8,368.34	8,368.35	8,368.36	8,368.35	8,368.35	8,368.34	8,368.34	0.00	1/2" rebar w/cap
17	513,556.68	2,217,641.91	8,360.76	8,360.76	8,360.77	8,360.75	8,360.74	8,360.74	8,360.73	8,360.74	8,360.73	8,360.74	8,360.73	8,360.73	8,360.72	8,360.72	0.00	1/2" rebar w/cap
18	513,635.51	2,217,689.80	8,350.47	8,350.47	8,350.47	8,350.46	8,350.44	8,350.46	8,350.46	8,350.47	8,350.47	8,350.47	8,350.47	8,350.46	8,350.45	8,350.45	0.00	1/2" rebar w/cap
19	513,711.41	2,217,742.70	8,356.49	8,356.52	8,356.51	8,356.51	8,356.49	8,356.51	8,356.52	8,356.52	8,356.51	8,356.51	8,356.50	8,356.50	8,356.50	8,356.50	0.00	1/2" rebar w/cap
20	513,820.43	2,217,768.54	8,346.15	8,346.17	8,346.16	8,346.17	8,346.15	8,346.14	8,346.14	8,346.14	8,346.15	8,346.14	8,346.15	8,346.14	8,346.13	8,346.13	0.00	1/2" rebar w/cap
21	513,912.62	2,217,806.85	8,331.93	8,331.92	8,331.92	8,331.93	8,331.90	8,331.92	8,331.91	8,331.91	8,331.90	8,331.89	8,331.90	8,331.88	8,331.88	8,331.89	-0.01	1/2" rebar w/cap
22	513,997.37	2,217,848.12	8,315.25	8,315.22	8,315.23	8,315.22	8,315.20	8,315.21	8,315.20	8,315.19	8,315.19	8,315.19	8,315.19	8,315.17	8,315.17	8,315.18	-0.01	1/2" rebar w/cap
23	514,100	2,217,900	8,298.55	8,298.52	8,298.53	8,298.52	8,298.49	8,298.49	8,298.48	8,298.48	8,298.50	8,298.50	8,298.50	8,298.50	8,298.50	8,298.51	-0.01	1/2" rebar w/cap
24	514,250	2,218,000	8,286.01	8,285.97	8,285.97	8,285.98	8,285.95	8,285.97	8,285.96	8,285.95	8,285.96	8,285.95	8,285.96	8,285.96	8,285.95	8,285.96	-0.01	1/2" rebar w/cap
25	514,400	2,218,150	8,273.43	8,273.39	8,273.40	8,273.37	8,273.38	8,273.38	8,273.36	8,273.36	8,273.38	8,273.38	8,273.36	8,273.36	8,273.35	8,273.35	0.00	1/2" rebar w/cap
26	514,500	2,218,200	8,256.00	8,255.96	8,255.96	8,255.97	8,255.95	8,255.95	8,255.94	8,255.94	8,255.95	8,255.95	8,255.95	8,255.95	8,255.94	8,255.94	0.00	1/2" rebar w/cap



WARE SURVEYING & ENGINEERING
G.P.S. & CONVENTIONAL SURVEYING - AUTOCAD MAPPING - CIVIL ENGINEERING



TOWER RESOURCES, INC.
2018 STATIC GPS SUBSIDENCE SURVEY

11/13/2018

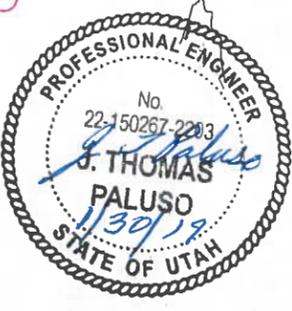
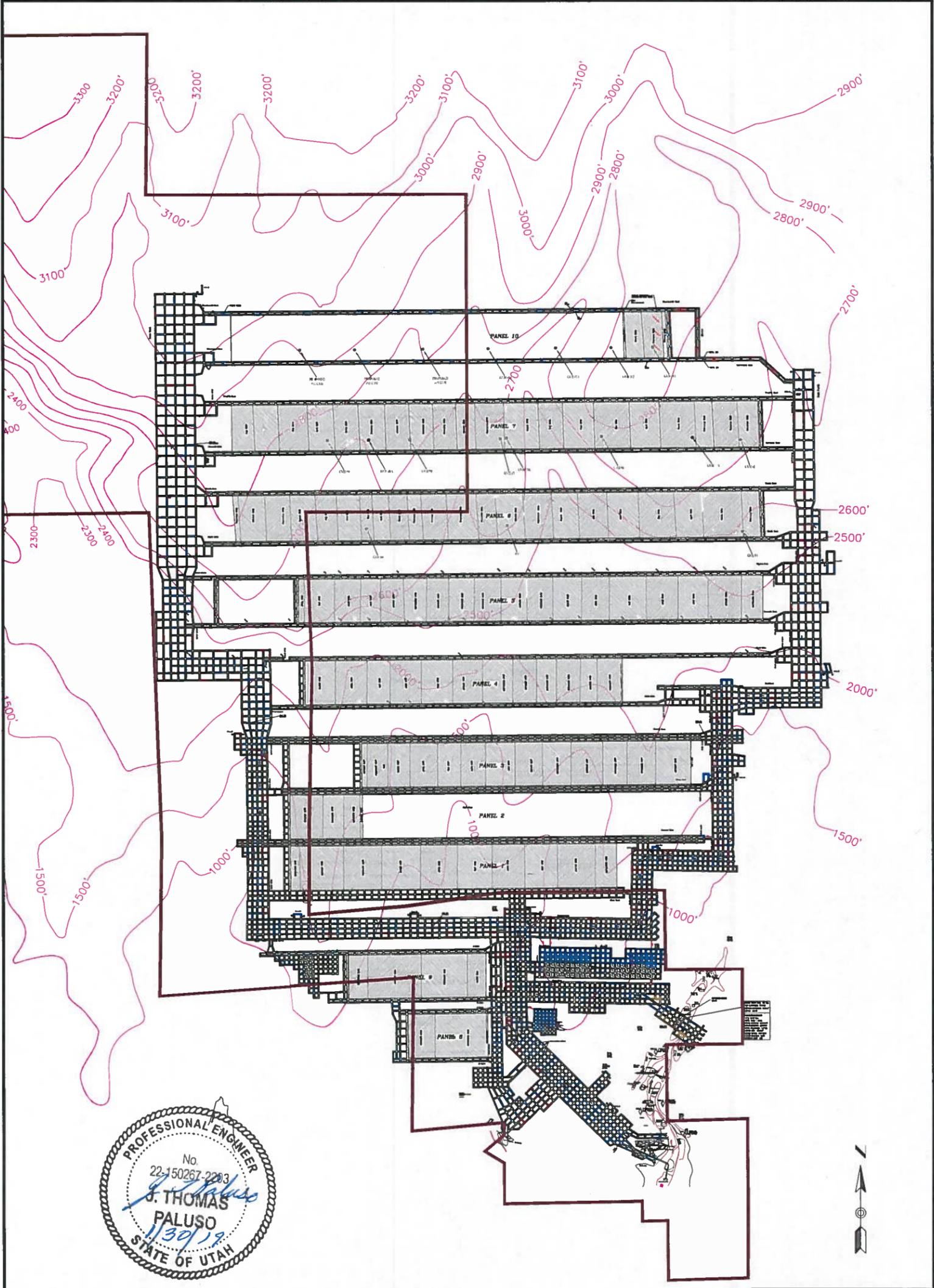
STATION	NORTHING (FEET)	EASTING (FEET)	2005 ELEV. (FEET)	2006 ELEV. (FEET)	2007 ELEV. (FEET)	2008 ELEV. (FEET)	2009 ELEV. (FEET)	2010 ELEV. (FEET)	2011 ELEV. (FEET)	2012 ELEV. (FEET)	2013 ELEV. (FEET)	2014 ELEV. (FEET)	2015 ELEV. (FEET)	2016 ELEV. (FEET)	2017 ELEV. (FEET)	2018 ELEV. (FEET)	2017-2018 (FEET)	NOTES
S10	507,824.28	2,217,196.61	8,594.72	8,594.75	8,594.75	8,594.74	8,594.75	8,594.75	8,594.74	8,594.74	8,594.76	8,594.75	8,594.76	8,594.76	8,594.75	8,594.72	0.03	1/2" alum. Cap
S20	510,331.38	2,217,642.84	8,573.89	8,573.72	8,573.70	8,573.71	8,573.71	8,573.70	8,573.72	8,573.70	8,573.71	8,573.72	8,573.71	8,573.70	8,573.72	8,573.70	0.02	5/8" rebar w/cap
SEC 36-31	513,118.67	2,214,339.99	8,280.12	8,280.01	8,279.91	8,279.92	8,279.91	8,279.92	8,279.93	8,279.91	8,279.93	8,279.91	8,279.91	8,279.92	8,279.92	8,279.88	0.04	1923 brass cap
SEC 36-1-31	510,465.01	2,214,345.45	8,459.10	8,458.70	8,458.52	8,458.50	8,458.51	8,458.52	8,458.52	8,458.51	8,458.49	8,458.52	8,458.53	8,458.51	8,458.53	8,458.50	0.03	1923 brass cap
SEC 36-1	510,454.53	2,211,696.78	8,606.30	8,606.12	8,605.98	8,605.97	8,605.97	8,605.96	8,605.98	8,605.98	8,605.97	8,605.97	8,605.95	8,605.96	8,605.95	8,605.94	0.01	1923 brass cap

LOCAL COORDINATE SYSTEM



WARE SURVEYING & ENGINEERING
G.P.S. & CONVENTIONAL SURVEYING - AUTOCAD MAPPING - CIVIL ENGINEERING





DID NOT PRODUCE COAL IN 2018



MINE MAP	
ABERDEEN MINE TOWER DIVISION	
6750 AIRPORT ROAD PRICE, UTAH 84501	
MSHA MINE ID #42-02020	
DRAWN BY	PJ
APPROVED BY	DH
SCALE	1" = 1500'
DATE	1 MARCH 2016
SHEET	1 of 1

G:\Current Drawings\Mine Maps\Tower MSHA\Aberdeen.dwg, 400 Scale, 3/17/2016 3:53:07 PM, 1:1