SAE DEMONSTRATION

DRILL SITE	TYPICAL	FLAT	WELL VEGETATED
LW1-1		X	X
LW1-2		X	X
LW1-3		X	X
LW1-4		X	X
LW1-5		X	X
LW1-6		X	X
LW1-7		X	X
LW1-8			X
LW2-1			X
LW2-2			X
LW2-3		X	X
LW2-4			X
LW2-4B		X	X
LW2-5		X	X
LW2-6		X	X
LW2-6B		X	X
LW2-7		X	X
LW2-8		X	X
LW3-1			X
LW3-2			X
LW3-2A			X
LW3-3			X
LW3-4			X
LW3-5		X	X
LW3-6			X
LW3-7		X	X
LW3-8			X
LW3-9		X	X
LW3-10		X	X
LW3-11			X
LW3-12		X	X
LW4-1		X	X
LW4-2			X
LW4-3			X
LW4-4	X		X
LW4-5			X
LW4-6			X
LW4-7		X	X
LW4-8		X	X
LW4-9		X	X
LW4-10			X
LW4-11			X
LW4-12			X
LW4-13			X
LW4-14			X
LW4-15		X	X
LW4-16		X	X
LW4-17	X		X
LW5-1			X
LW5-2			X
LW5-3			X
LW5-4			X
LW5-5			X
LW5-6			X
LW5-6B	X		X
LW5-7		X	X
LW5-8		X	X
LW5-9		X	X
LW5-10		X	X
LW5-11			X
LW5-12			X
LW5-13			X
LW5-14		X	X
LW5-15			X
LW6-1		X	X
LW6-2	X		X
LW6-3		X	X
LW6-4		X	X
LW6-5	X		X
LW6-6			X
LW6-7	X	X	X
LW6-8		X	X
LW6-9		X	X
LW6-10			X
LW6-11			X
LW6-12			X
LW7-3		X	X
LW7-4		X	X
LW7-5			X
LW7-6			X
LW7-8	X		X
LW7-10	X	X	X
LW8-2			X
LW8-3			X
LW8-5		X	X
LW9-1			X
LW9-2	X	X	X
LW9-3			X
LW10-1		X	X
LW10-2		X	X
LW10-3		X	X
LW10-4		X	X
LW10-5		X	X
LW10-6			X
LW10-7		X	X
LW11-1		X	X
LW11-2		X	X
LW11-3	X		X
LW11-4		X	X
LW11-6	X		X
LW12-2	X		X
LW12-3		X	X
LW12-5	X		X
LWB7-1		X	X
LWB7-2		X	X
LWB7-3		X	X
LWB7-4		X	X
LWB9-2		X	X
LWB9-3		X	X
LWB10-1	X		
LWB10-2		X	
LWB10-3		X	
LWB10-4		X	
LWB11-1		X	
LWB11-2		X	
LWB11-3		X	
LWB11-4		X	
LWB12-1A	X		
LWB12-1		X	
LWB12-2		X	
LWB12-3		X	
LWB12-4		X	
LWB12-5		X	
LWB13-1		X	
LWB13-2		X	
LWB13-3		X	
LWB13-4		X	
LWB13-5		X	
LWB14-1		X	
LWB14-2		X	
LWB14-3		X	
LWB14-4		X	
LWB14-5		X	
LWB15-1		X	
LWB15-2		X	
LWB15-3		X	
LWB15-4		X	
LWB15-5		X	

Notes: XR - applicable once reclaimed.

SAE DEMONSTRATION

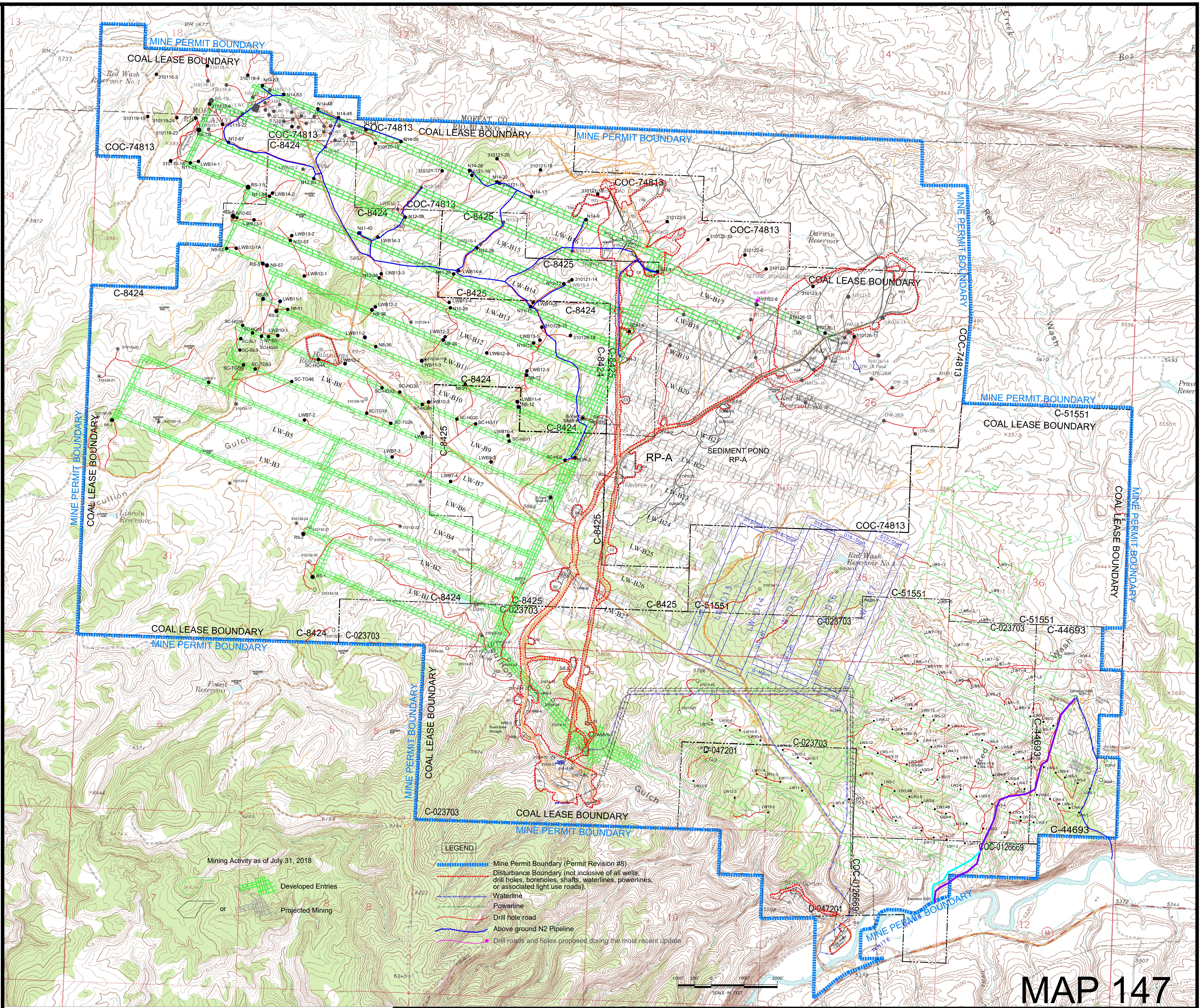
DRILL SITE	TYPICAL	FLAT	WELL VEGETATED
21013-19		X	X
21013-20		X	X
21014-21		X	X
21014-22		X	X
21014-23			X
21014-25		X	X
21014-26			X
21014-27		X	X
21014-29	NA - in D-Portal Area		
21014-30	NA - in D-Portal Area		
21014-31	NA - in D-Portal Area		
21014-32	NA - in D-Portal Area		
21014-34	NA - on blister		
310129-04		X	X
310129-17		X	X
310129-18		X	X
310130-17		X	X
310130-18			X
310130-19	X	X	X
310130-20		X	X
310130-21		X	X
310131-04		X	X
310132-17			X
310132-18			X
310132-19		X	X
310132-20		X	X
310132-21		X	X
310132-22		X	X
310132-23		X	X
310132-24		X	X
310133-18		X	X
310133-19		X	X
310133-21		X	X
310134-11		X	X
310135-09		X	X
310135-11		X	X
310117-2		X	
310117-3		X	
310117-4		X	
310118-3		X	
310118-4		X	
310118-6		X	
310118-7		X	
310118-8		X	
310118-10		X	
310119-18		X	
310119-19		X	
310119-22		X	
310119-23		X	
310119-24		X	
310120-15		X	
310120-16		X	
310120-17		X	
310120-18		X	
310120-20		X	
310121-14		X	
310121-15		X	
310121-16		X	
310121-17		X	
310121-18		X	
310121-19		X	
310121-20		X	
310122-5		X	
310122-6		X	
310122-7		X	
310122-8		X	
310122-10		X	
310123-1		X	
310123-2	NA - in Refuse Area 2/3/4		
310126-11		X	
310126-12	NA - in Refuse Area 5a		
310126-13		X	
310126-14		X	
310128-13		X	
310128-14		X	
SDH-1		X	X
SDH-2		X	
SDH-3	X		
SDH-4	X		
SDH-5		X	X
SDH-6		X	X
SH-1	X	X	
SH-2	X	X	
SH-4		X	
RDH-1	X		X
RDH-2	X	X	
RDH-3	X		
RDH-4		X	
B-Vent	X		
B-Vent #2	X	X	
B-Vent #3		X	
WMVS-1	X	X	
RS-1			X
RS-2			X
RS-3	X		X
RS-4		X	
RS-5		X	
RS-6		X	
RS-11L	X		
RS-12L	X		
RS-13L	X		
SC-SL1		X	X
SC-SL3		X	
SC-HG0	X		X
SC-HG11		X	
SC-HG17		X	
SC-HG20		X	
SC-HG26		X	
SC-HG30		X	
SC-HG33		X	
SC-HG44		X	
SC-HG54		X	
SC-HG56	X		
SC-HG59		X	
SC-TG29		X	
SC-TG33		X	
SC-TG46		X	
SC-TG53	X		
SC-TG56		X	
N7-53	X		
N8-12		X	
N8-21		X	
N8-36		X	
N8-51	X		
N8-55		X	
N9-12		X	
N9-26		X	
N9-38		X	
N9-57		X	
N9-62	X		
N10-12		X	
N10-26		X	
N10-38		X	
N10-53		X	
N10-62	X		
N11-15		X	
N11-28		X	
N11-43		X	
N11-58		X	
N11-71		X	
N12-12		X	
N12-26		X	
N12-38		X	
N12-53		X	
N12-67		X	
N14-9		X	
N14-13		X	
N14-17		X	
N14-22		X	
N14-26		X	
N14-31		X	
N14-36		X	
N14-41		X	
N14-45		X	
N14-48		X	
N14-53		X	
N14-57		X	

Notes: XR - applicable once reclaimed.

SAE DEMONSTRATION

SOIL PILE	TYPICAL	LARGE	WELL VEGETATED
(4)			X
C-1	(a)		X
C-2	(a)		X
C-3	(a)		X
C-4	(a)		X
C-5	(a)		X
C-6	(a)		X
C-7	(a)		X
C-8	(a)		X
TS-1	(a)		X
TS-2	(a)		X
TS-3	(a)		X
TS-4	(a)		X
TS-5	(a)		X
TS-6	(a)		X
TS-7	(a)		X
R-1	(a)		X
R-2	(a)		X
R-3	(a)		X
R-4	(a)		X
R-5	(a)		X
R-6	(a)		X
R-7	(a)		X
R-8	(a)		X
RA-1	(a)		X
RA-2		(a)	X
RA-3		(a)	X
RA-4		X	
RA-5		X	
RA-6		X	
RA-7		X	
RA-8		X	
HRB-6	X		

Notes:
(a) Once redisturbed, the soil stockpiles will divert back to the "typical" or "large" demonstrations as applicable.
(4) D-Portal soil pile runoff to be diverted to sediment pond once redisturbed.
(z) Drill pad constructed but no hole was drilled.


MINE PERMIT BOUNDARY
COAL LEASE BOUNDARY
COC-74813
C-8424
C-8425
C-51551
C-023703
C-44693
COC-0126669
D-047201
RP-A
SEDIMENT POND
RP-A
REFUSE DISPOSAL AREAS
SLOT STORAGE
TRANSFER #1
TRANSFER #2
TOPSOIL
SUBSOIL
LOAD OUT
MOFFAT CO.
RIO BLANCO CO.
Red Wash Reservoir No 1
Red Wash Reservoir No 2
Red Wash Reservoir No 3
Darwin Reservoir
Halandras Reservoir
Lincoln Reservoir
Fossil Reservoir
Scullion Gulch
Red Wash
Box Elder
WHITE RIVER
Raw Water Lagoon
Road Base Storage
Elevation 5320
Elevation 5465
DISCHARGE POINT TO RED WASH
EXISTING SED. CONTROL DEVICES
PROCESS POND
POWER LINE
Nitrogen Pipeline (above ground)
LW-B1
LW-B2
LW-B3
LW-B4
LW-B5
LW-B6
LW-B7
LW-B8
LW-B9
LW-B10
LW-B11
LW-B12
LW-B13
LW-B14
LW-B15
LW-B16
LW-B17
LW-B18
LW-B19
LW-B20
LW-B21
LW-B22
LW-B23
LW-B24
LW-B25
LW-B26
LW-B27
D13-Start
D14-Start
D15-Start
D16-Start
D17-Start
D-Mains
COUNTY RD #65
1000' 500' 0 1000' 2000'
SCALE IN FEET
Mining Activity as of July 31, 2018
Developed Entries
or
Projected Mining

LEGEND

▬	Mine Permit Boundary (Permit Revision #8)
┄	Disturbance Boundary (not inclusive of all wells, drill holes, boreholes, shafts, waterlines, powerlines, or associated light use roads).
—W—W—W—	Waterline
—P—P—P—	Powerline
─	Drill hole road
━	Above ground N2 Pipeline
─●	Drill roads and holes proposed during the most recent update

MAP 147

* NOTE - Map 147 does not constitute approval of underground mining plan and permit boundary as shown on this map. See Map 1 for current permit boundary and Map 120 for approved underground mining plan.

SMALL AREA EXEMPTION LEGEND

TS1-TS5	Miscellaneous topsoil piles.
C1-C7	Conveyor topsoil piles.
R1-R8	Haul Road topsoil piles.
RA1-RA8	Refuse Area soil piles.
SDH1-8	Mine dewatering well locations.
LWx-x	Mine degas borehole locations.
x101xx-x	Development drill hole locations.
RS1-RS6	Return Shaft locations.
RDH-x	Rock Dust borehole locations.
HRB-2-6	Haul Road blisters.
SH-x	Service hole.
SC-xxxx	Spontaneous combustion drill holes.
Nx-xx	Nitrogen injection/monitoring holes.
(1)	Water storage tank area.
(2)	Explosives storage area.
(3)	Halandras landfill area.
(4)	D Portal topsoil pile.
(5)	Radio Tower area.
(6)	East Portal area.
(7)	Haul Road X County Road 65 laydown area.
(8)	Transfer Station #1 area.
(9)	Transfer Station #1 staging/laydown area.
(10)	Laydown area northwest of Transfer Station #2.
(11)	Southern edge of Slot Storage staging area.
(12)	Transfer Station #2 to Slot Storage belt line.
(13)	Slot Storage - south drainage.
(14)	Slot Storage - east drainage.
(15)	Slot Storage - north drainage.
(16)	Slot Storage Emergency Discharge Tower and belt.
(17)	Western laydown area (#2) between Railroad Loop & Slot Storage.
(18)	Nitrogen Plant #2
(19)	Laydown area northeast of Slot Storage.
(20)	(deleted)
(21)	B-Vent Shaft #1.

No.	Revision	Date	Check
36	Added SH-4 (MR 164).	05/20/2015	
37	Added four exploration holes and relocated RS-12L shaft (MR 165).	07/30/2015	
38	Added seven exploration holes (MR 167).	07/30/2015	
39	Added B-Seam Dewatering #2 (TR 70).	09/30/2016	
40	Added 15 exploration, LWB15-x, N13-x, and RS-13L pilot hole. Removed 310122-9 (MR 171).	05/31/2017	
41	Modified routes for N2 Lines (HDPE pipe), added HDPE pipe waterlines.	08/16/2018	
42	Added 12 Nitrogen injection and sampling holes. (MR 176)	05/20/2020	
43	Added 2 Water injection holes. (MR 177)	07/28/2020	
44	Added 3 Dewater holes and one well monitoring hole.	01/05/2021	
45	Added 9 Longwall Core holes.	01/19/2021	
46	Added 8 Longwall Core holes.	02/11/2021	
47	Added 7 Longwall Core holes.	02/25/2021	
48	Added 3 Dewater Holes.	02/25/2021	
49	Added 8 nitrogen injection and sampling holes, 4 exploration holes. (MR 182)	09/13/2021	
50	Added DW-1R Dewatering hole, pond, and associated disturbance. (TR-73)	12/20/2021	
51	N1-14 nitrogen injection and sampling hole relocated (MR-183).	02/21/2022	

No.	Revision	Date	Check
11	Addition of degas boreholes for longwall panel LWB-8 (Revised to LWB-9 with Rev. 18)	04/19/2006	
12	Expanded permit area	12/06/2006	
13	Addition of B-Vent Shaft #2, SH-1, SH-2	4/16/2007	
14	Addition of LWB8 fire holes (SC-xxxx) for air sampling/N2 injection & nitrogen pipeline(MR133).	2/29/2008	
15	Addition of LWB10-1 through LWB10-4 and removal of LWB8-1 degas boreholes (TR66)	2/29/2008	
16	Relocation of LWB10-1, add RS-4 (MR #134) and changed permit boundary per PR #6	5/1/2008	
17	Relocation of LWB10-1 and RS-4 (MR #135)	7/14/2008	
18	Addition of N7-53, N8-51, N8-36, and N8-21 nitrogen injection/monitoring holes (MR #136)	8/11/2008	
19	Addition of B-Vent Shaft #3 (MR #137)	9/9/2008	
20	Addition of N9-56 nitrogen injection/monitoring hole	7/8/2009	
21	Add five 'N' hole, four LWB11 holes, RS-5, road from haul road to RDH-3	8/20/2009	
22	Show access routes to older drill holes, revised water line routing @ RW Lagoon (MR #143)	3/24/2010	
23	Added Service Hole SH-3 (MR #144)	9/01/2010	
24	Added four N10 holes, five LWB12 holes, and associated roads and N2 pipelines (MR #145).	01/19/2011	
25	Adjusted disturbance area boundary for B-seam dewatering system at SH-3 (TR #68).	01/19/2011	
26	Re-added N2 pipeline back to N8-21 (MR #146).	04/18/2011	
27	Added Return Shaft RS-6 and drill holes N9-62 and LWB12-1A (MR-148)	8/10/2011	
28	Added N2 pipeline to remaining N10-XX holes.	2/16/2012	
29	Added RDH-4 and breathable air hole facilities.	5/22/2012	
30	Added one N10 hole, four N11 holes, five LWB13 holes, & four development holes (MR #156)	8/19/2013	
31	Added return shaft - RS-11L (TR#69)	8/26/2013	
32	Revised locations for RS-11L, N10-62 and LWB13-1 (MR#158)	11/18/2013	
33	Added five exploration holes in LW-B13 and LW-B15, added segment of N2 line (MR#159)	06/05/2014	
34	Added Nitrogen Plant #2 and rerouting of N2 lines (MR#160 and MR#161)	09/03/2014	
35	Added 9 exploration, 5 LWB14-x, 6 N11-71 and N12-xx, and RS-12L. Removed 2 expl holes.	01/11/2015	

No.	Revision	Date	Check
1	TR-53	04/23/2001	
2	MR-121 Addition of 3 drill holes in Sec. 30	05/03/2001	
3	TR-56 Removal of railroad from mine disturbance boundary	08/20/2001	
4	MR-122 Designation of SAEs for soil piles and drill sites	09/27/2001	
5	Removal of railroad from mine disturbance boundary	10/18/2001	
6	Refinement of disturbance boundary around loadout	12/03/2001	
7	Addition of Return Shaft RS-3	05/21/2002	
8	Addition of HRB-6 & new disturbance @ HR/CR65 intersection & new water line along CR65	04/12/2004	
9	Addition of degas boreholes for longwall panel LWB-7	03/29/2005	
10	Addition of Rock Dust Hole RDH-3	06/29/2005	

BLUE MOUNTAIN ENERGY, INC.

DESERADO MINE RANGELY, COLORADO

SMALL AREA EXEMPTIONS LOCATION MAP

Dwg. by: MPM	Dwg. File Name: Map147 - base MR183.dwg on - Map147 - base.dwg
Chk. by:	Appr. by:
Scale: 1" = 1000'	Date: 4/18/2022