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February 8, 2023

Mrs. Amy Yeldell
Division of Reclamation, Mining and Safety
Room 215, c/o: Minerals Division
1001 E 62nd Ave.
Denver, CO 80216

**Re: Natural Soda LLC Nahcolite Project Permit No. M-1983-194 Technical Revision
(TR-50) Adequacy Review Response**

Dear Amy:

Natural Soda LLC (NS) hereby submits their response to the TR-50 Adequacy Review. Below are the original questions posed by the DRMS with D&A/NS responses in blue.

1. Please specify the plugging and abandonment measures to be utilized for the proposed wells 18H-1V and 18H-IR-W.
D&A: The wells will be P&A as follows:
18H-IR-W: A CIBP will be set at 1,972 feet MD GL, the 9.625-inch casing will be filled to surface with a minimum of 152.5 bbls (856 gallons) of neat cement.
18H-1V: A CIBP will be set at 2,277.5 feet MD GL, the 9.625-inch casing will be filled to surface with a minimum of 176 bbls (989 gallons) of neat cement.
2. The Well location and proposed utilities (map 2) depicts additional features not discussed in the narrative portion of this TR. Are the following additional features being requested at this time?
 - a. New well pads for 18H-IR-E and alternate proposed 18/20-IR-E. D&A: The 18H-IR-E and Alternative Proposed 18/20-IR-E Pad locations are conceptual and not part of the TR-50 proposal.
 - b. Three additional surface subsidence monitoring wells; SSM18, SSM19 and SSM20. Note the SSM18 is also depicted on the Locations (map 1). D&A: These are SSMs, Surface Subsidence Monuments, they are not wells. These are surface monuments placed and surveyed as the mining area expands to monitor the ground surface. There is no measurable (de minimis) disturbance associated with SSM installations. The subsurface subsidence monitoring wells are abbreviated as SSMW.

3. The Well location and proposed utilities (map 2) states "Remove and Replace (2) 8" production pipelines". Are the removal and replacement pipelines identical lengths and material types and thus not a factor for bonding purposes? D&A: They are not identical. The two existing 8" pipelines to the DVPW pad will be removed and replaced in part with one 8" and one 6" pipeline. Please see the attached map.
4. Provide an updated table tracking the amount of pipeline by size located on site. Specifically address the following changes;
 - a. What is the total length of additional pipe by size to be added for access to the 18H-1V well/pad?
D&A: 1,951' of 8" and 1,968 feet of 6" pipeline
 - b. What is the total length of additional pipe by size to be added for access to the 18H-IR-W well?
D&A: 402' of 8" and 396' of 6" pipe
 - c. Has any pipe been removed in conjunction with recently abandoned wells?
D&A: Yes, approximately two sections of 8" (897' and 915') pipe from the proposed pipeline intersection to the DVPW, and approximately 1,165' of one line of 6" pipe from the DVPW pad to the 14H-1V will be removed.
5. Will the construction of the new pipeline road require any significant contouring? If so please provide the details for construction as well as for removal. Historically the Division has only bonded for ripping, topsoil and reveg of roads. D&A: No, please see the attached "Well pad & Road Acreage Analysis" for the road acreage.
6. Are the disturbed acreages for proposed well pad access roads accounted for under the "proposed area of disturbance" acreages listed on each pad map? D&A: Yes, see the attached "Well pad & Road Acreage Analysis".
7. Please provide an updated "Well pad & Road Acreage Analysis" spreadsheet which includes the TR-50 proposed changes highlighted. Include both the addition of new well pads and the change of status pad for reclaimed areas. D&A: Please see the attached "Well pad & Road Acreage Analysis".
8. For bonding the Division is providing a list of all open wells which will require abandonment. Please review this table to ensure that all recent changes (abandoned wells) have been accounted for and that the information presented is accurate. D&A: Please see table of revisions below.

Cells requiring edits in red.

Circus Order	Borehole Description	Sealing/Item Method	Diam (in)	CIRCE S Diam (in) ¹	Length (ft) ²	BP Size (in)	BP Depth (ft)	Comment
4	90-3	Portland cement grout	4	4	1627	N/A	N/A	
17	DVPW-1(B)	Portland cement grout	6.4	8	1900	6	1900	Delete entry: P&A'd in 2022 with DVPW-1(A)
40	14H-1V	Portland cement grout	8.9	10	1945	8	1945	CIBP installed September 2022
47	BG-11	Portland cement grout	4	4	1677	N/A	N/A	
48	PA-1	Portland cement grout	4	4	490	N/A	N/A	
49	AG-2	Portland cement grout	4	4	1230	N/A	N/A	
50	BG-10	Portland cement grout	4	4	1420	N/A	N/A	
51	17H-E SSMW	Portland cement grout	4	4	1828	N/A	N/A	
52	18H-1V	Portland cement grout	8.9	10	1972	8	1972	Proposed TR-50
53	18H-IR-W	Portland cement grout	8.9	10	2278	8	2278	Proposed TR-50

Also included with this response is the Well pad & Road Acreage Analysis spreadsheet which was sent to you in excel format via email.

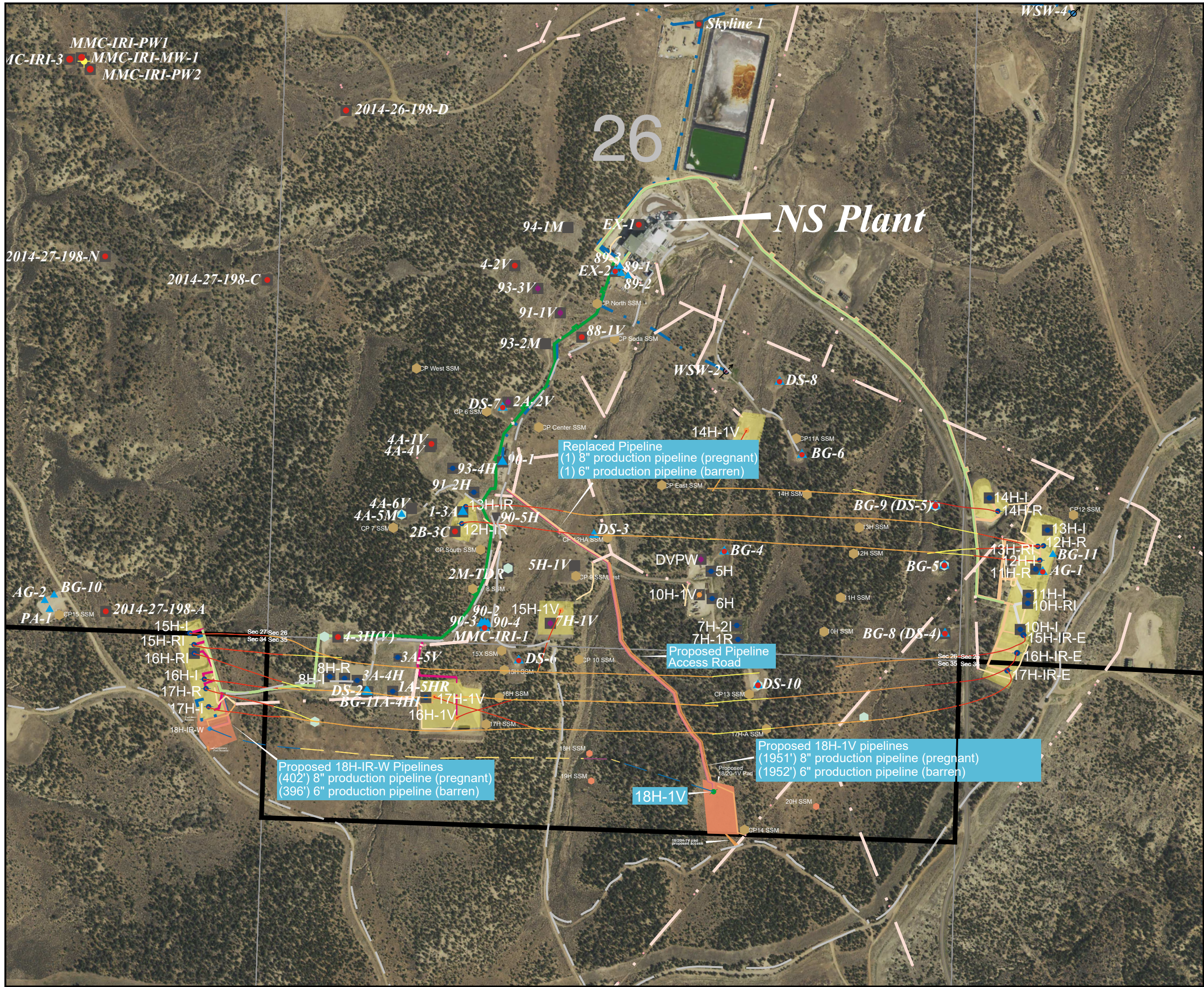
Should you have any questions or comments, please contact me at (970) 254-1224 or (970) 216-1010 (c), or Kirk Daehling at (970) 456-1268.

Regards,



Gerald J. Daub, PG, CPG
President
Daub & Associates, Inc.

Cc: Kirk Daehling
Business Director
Natural Soda LLC



Legend

- Natural Soda Lease Boundary
- Horizontal Production Well
- Vertical Production Well
- Slant Production Well
- Hydrology Monitoring Well
- Abandoned Well
- Core Hole
- Subsurface Subsidence Monitor Well (SSMW)
- Surface Subsidence Monument (SSM)
- Horizontal Well - Proposed
- Slant Well - Proposed
- Surface Subsidence Monument (SSM) - Proposed
- Water Supply Well
- Production Well - Cased Interval
- Production Well - Production Liner
- Production Well - Well Trace
- Production Well - Cased Interval - Proposed
- Production Well - Production Liner - Proposed
- Production Well - Well Trace - Proposed
- Road
- Proposed Road
- Production Pad - Existing
- Production Pad - Proposed
- Production Pipeline - Active/Surface 16"
- Production Pipeline - Active/Surface 12"
- Production Pipeline - Active/Buried 12"
- Production Pipeline - Active/Surface 8"
- Production Pipeline - Active/Buried 8"
- Production Pipeline - Active/Surface 6"
- Production Pipeline - Active/Buried 6"
- Production Pipeline - Proposed, 8"
- Production Pipeline - Proposed, 6"
- Overhead Electrical Lines
- Buried Electrical Lines
- Electrical Lines - Proposed

Grid North (NAD27)

0 500' 1000'

scale in feet

Natural Soda, LLC
Well Pad & Road Acreage

WELL PADS												ROADS											
DISTURBED			UNDERGOING INTERIM RECLAMATION			UNDERGOING FINAL RECLAMATION			SUCCESSFULLY RECLAIMED (meets ROD goals)			DISTURBED			UNDERGOING INTERIM RECLAMATION			UNDERGOING FINAL RECLAMATION			SUCCESSFULLY RECLAIMED		
Description	Area, ft ²	Acres	Description	Area, ft ²	Acres	Description	Area, ft ²	Acres	Description	Area, ft ²	Acres	Description	Area, ft ²	Acres	Description	Area, ft ²	Acres	Description	Area, ft ²	Acres	Description	Area, ft ²	Acres
5H	98,187	2.254	2M-TDR, 3M-TDR	5,554	0.128	C	28,725	0.659	1A-4HI	29,896	0.686	RD A	23,690	0.544	RD D	1,044	0.024	RD A rdp	928	0.021	RD E rdp	10,649	0.244
7H	76,787	1.763	4A-1V	57,885	1.329	G	26,321	0.604	1A-5HR	68,443	1.571	RD B	45,832	1.052	RD G	8,168	0.188	RD G rdp	1,050	0.024	RD P rdp	4,607	0.106
7H-1V (see 15H-1V)	0	0.000	89-1	14,961	0.343	H	28,880	0.663	3A-5V	64,843	1.489	RD C	18,711	0.430	RD H	6,168	0.142	RD H-C rdp	10,103	0.232	RD Q rdp	30,284	0.695
10H-13H	290,596	6.671	90-1	38,490	0.884	N	29,639	0.680	4-2V & 93-3V	131,882	3.028	RD E	778	0.018	RD I	1,528	0.035	RD U-T rdp	27,602	0.634	RD H rdp	11,542	0.265
14H	98,457	2.260	90-2	18,509	0.425	U	25,075	0.576	5H-1V	35,862	0.823	RD F	900	0.021	RD I rdp (DS-8)	1,476	0.034			0.000	RD N-C rdp	10,196	0.234
88-1V	19,714	0.453	90-5H	8,791	0.202	MW-1, PW-1, PW-2	24,278	0.557	91-1V	8,746	0.201	RD K	1,808	0.042	RD J	578	0.013			0.000	WSW-3 pipeline	21,521	0.494
15H-17H	207,133	4.755	BG-4	20,343	0.467	IRI-3	6,872	0.158	A	24,345	0.559	RD 14H	421	0.010	RD M rdp (DS-9)	7,799	0.179			0.000	WSW-4 pipeline	53,675	1.232
12H-13H-IR (1-3A, 2B-3C)	74,053	1.700	BG-6	25,439	0.584	4A-5M, 4A-6V	26,122	0.600	T	31,010	0.712	RD 15-17	13,252	0.304	RD M-K rdp (DS-9/BG-7)	8,651	0.199			0.000			
14H-1V 2019	77,972	1.790	DS-3	6,524	0.150	4-3H(V)	39,927	0.917	E	25,379	0.583	RD 15H-SSMW	1,464	0.034	RD O rdp	11,436	0.263			0.000			
16-17H-IR-E	126,324	2.900	DS-6	25,160	0.578	93-2M	12,505	0.287	P	24,581	0.564	16/17H-1V	3,600	0.083	RD DS-6 rdp	453	0.010			0.000			0.000
15H-1V (subsumes 7H-1V)	113,256	2.600	DS-7, 2A-2V	38,045	0.873	93-4H&91-2H	88,994	2.043	Q	24,786	0.569	DS-10	1,300	0.030	RD WSW-3 rdp	2,405	0.055			0.000			0.000
16-17H-1V (162,900 - 28,600 of existing 1A-4HI pad)	243,946	5.600	DS-10	52,708	1.210	BG-5	38,668	0.888	R	26,013	0.597	Upgradient Monitor Pad Rd	840	0.019	RD WSW-4 rdp	344	0.008			0.000			0.000
18H-1V (Proposed)	128,942	2.960	I (DS-8)	26,732	0.614	BG-8 (DS-4)	45,021	1.034	94-1M	56,433	1.296	18H-1V (proposed)	2,460	0.060	RD 17H-SSMW	4,354	0.100			0.000			0.000
18H-IR-W (Proposed)	93,215	2.140	K (BG-7)	27,870	0.640	BG-9 (DS-5)	29,973	0.688	D	27,853	0.639	18H-IR-W (temp access + western access; proposed)	1,665	0.040		0.000			0.000			0.000	
17H-E SSMW	27,840	0.639	M (DS-9)	29,224	0.671			0.000	IRI-2	8,251	0.190	18H-1V pipeline rd (proposed)	21,040	0.480		0.000			0.000			0.000	
		0.000	WSW-2	30,389	0.698			0.000			0.000		0.000		0.000		0.000			0.000		0.000	
		0.000	WSW-3	32,647	0.749			0.000			0.000		0.000		0.000		0.000			0.000		0.000	
		0.000	WSW-4	32,789	0.753			0.000			0.000		0.000		0.000		0.000			0.000		0.000	
		0.000	WSW-5 (O-GMW-A)	28,854	0.662			0.000			0.000		0.000		0.000		0.000			0.000		0.000	
		0.000	8H/3A-4H	88,287	2.027			0.000			0.000		0.000		0.000		0.000			0.000		0.000	
		0.000	15H-SSMW	24,594	0.565			0.000			0.000		0.000		0.000		0.000			0.000		0.000	
		0.000	17H-SSMW Pad	12,791	0.294			0.000			0.000		0.000		0.000		0.000			0.000		0.000	
		0.000	Upgradient Monitor Pad	38,495	0.884			0.000			0.000		0.000		0.000		0.000			0.000		0.000	
		0.000	DS-2	6,659	0.153			0.000			0.000		0.000		0.000		0.000			0.000		0.000	
TOTAL	1,676,422	38	TOTAL	691,740	16	TOTAL	451,000	10	TOTAL	588,323	14	TOTAL	137,761	3	TOTAL	54,404	1	TOTAL	39,683	1	TOTAL	142,474	3
TOTAL Pad & Road ACREAGE																							
Pad & Road DISTURBED		84																					
INTERIM RECLAMATION		42																					
FINAL RECLAMATION		17																					
SUCCESSFULLY RECLAIMED		11																					
Pad & Road Check sum (ac)		14																					
		84																					