# Initial

# Application

# Part I

**Received 9/20/21** 

RECEIVED: 9/20/21

REVIEWER:

TYPE: **SWD**  APP NO:

pBL2126453421

ABOVE THIS TABLE FOR OCD DIVISION USE ONLY

#### **NEW MEXICO OIL CONSERVATION DIVISION**



- Geological & Engineering Bureau –	•
1220 South St. Francis Drive, Santa Fe, NM 8	37505
ADMINISTRATIVE APPLICATION CHECK	CLIST
THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCE REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL I	
Applicant: Novo Oil & Gas Northern Delaware, LLC	OGRID Number: 372920
Well Name: Taco Truck Fed SWD 1	API: 30-015-
Pool: SWD; Devonian	Pool Code: <u>96101</u>
SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PRO INDICATED BELOW	OCESS THE TYPE OF APPLICATION
TYPE OF APPLICATION: Check those which apply for [A]  A. Location – Spacing Unit – Simultaneous Dedication  NSP (PROJECT AREA)  NSP (PROTATION UNIT)  B. Check one only for [I] or [II]  [I] Commingling – Storage – Measurement  DHC CTB PLC PC OLS OL  [II] Injection – Disposal – Pressure Increase – Enhanced Oil R  WFX PMX SWD IPI EOR PP	SWD-2459  M ecovery
<ul> <li>2) NOTIFICATION REQUIRED TO: Check those which apply.</li> <li>A. Offset operators or lease holders</li> <li>B. Royalty, overriding royalty owners, revenue owners</li> <li>C. Application requires published notice</li> <li>D. Notification and/or concurrent approval by SLO</li> <li>E. Notification and/or concurrent approval by BLM</li> <li>F. Surface owner</li> <li>G. For all of the above, proof of notification or publication is</li> <li>H. No notice required</li> </ul>	Notice Complete Application Content Complete
3) CERTIFICATION: I hereby certify that the information submitted with administrative approval is accurate and complete to the best of runderstand that no action will be taken on this application until the notifications are submitted to the Division. Note: Statement must be completed by an individual with managerial and	my knowledge. I also ne required information and
9-17-21 Brian Wood  Date	

Signature

Print or Type Name

505 466-8120

Phone Number

brian@permitswest.com

e-mail Address

STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

#### Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, New Mexico 87505

FORM C-108 Revised June 10, 2003

#### APPLICATION FOR AUTHORIZATION TO INJECT

I.	PURPOSE: Secondary Recovery Pressure Maintenance XXX Disposal Storage Application qualifies for administrative approval? Yes No
II.	OPERATOR: NOVO OIL & GAS NORTHERN DELAWARE, LLC
	ADDRESS: 1001 WEST WILSHIRE BLVD., SUITE 206, OKLAHOMA CITY, OK 73116
	CONTACT PARTY: BRIAN WOOD (PERMITS WEST, INC.) PHONE: 505 466-8120
III.	WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.  Additional sheets may be attached if necessary.
IV.	Is this an expansion of an existing project? Yes XXX No  If yes, give the Division order number authorizing the project:
V.	Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
VI.	Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.  Taco Truck Fed SWD 1
VII.	Attach data on the proposed operation, including:  Devonian (96101)
	<ol> <li>Whether the system is open or closed;</li> <li>Proposed average and maximum injection pressure;</li> <li>Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,</li> <li>If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).</li> </ol>
*VIII.	Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
IX.	Describe the proposed stimulation program, if any.
*X.	Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
*XI.	Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
XII.	Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
XIII.	Applicants must complete the "Proof of Notice" section on the reverse side of this form.
XIV.	Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
	NAME: BRIAN WOOD TITLE: CONSULTANT
	NAME: BRIAN WOOD  SIGNATURE: DATE: SEPT. 15, 2021
	E-MAIL ADDRESS: brian@permitswest.com
*	If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal:

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

#### III. WELL DATA

- A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:
  - (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
  - (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
  - (3) A description of the tubing to be used including its size, lining material, and setting depth.
  - (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

- B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.
  - (1) The name of the injection formation and, if applicable, the field or pool name.
  - (2) The injection interval and whether it is perforated or open-hole.
  - (3) State if the well was drilled for injection or, if not, the original purpose of the well.
  - (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
  - (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

#### XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,
- (4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

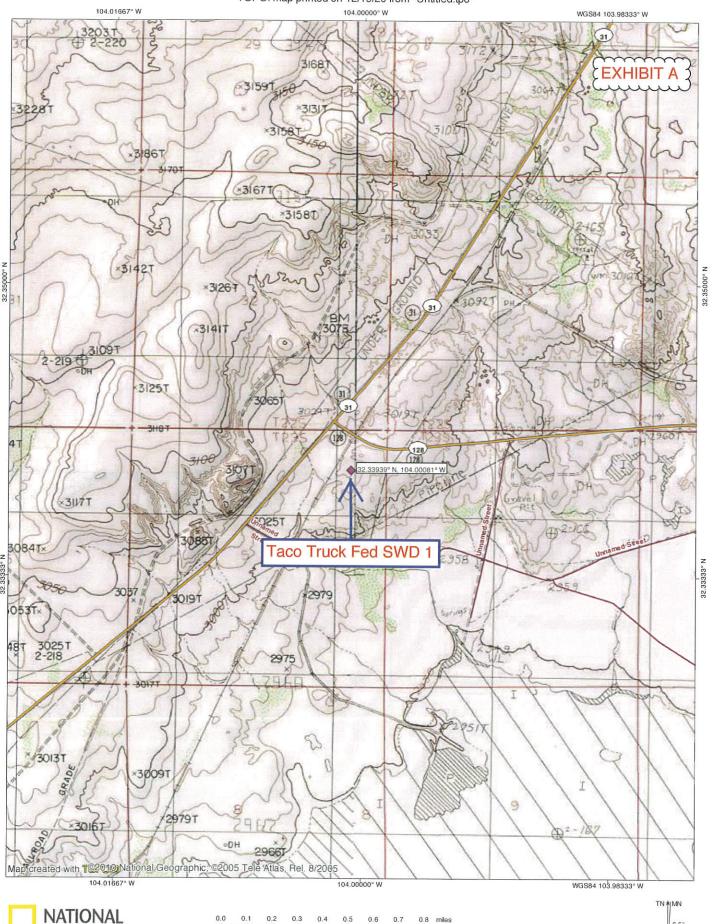
NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

#### INJECTION WELL DATA SHEET

OPERATOR: NOVO OIL & GAS NORTHERN DELAWARE	, LLC			
WELL NAME & NUMBER: TACO TRUCK FED SWD 1	,			
WELL LOCATION: 852' FNL & 773' FEL FOOTAGE LOCATION	LOT 1 UNIT LETTER	5 SECTION	23 S TOWNSHIP	29 E RANGE
WELLBORE SCHEMATIC  (not to scale)		WELL CO Surface O	ONSTRUCTION DAT Casing	<u>'A</u>
13.375" 54.5# in 20" hole @ 2869' TOC (1281 sx) = GL  9.625" 40# in 12.25" hole @ 9871' TOC (2059 sx) = GL	Cemented with: Top of Cement:  Hole Size:20"  Cemented with: 12	26" 717 sx. SURFACE Intermediat & 12.25 281 & 2059 sx. URFACE FOR BOTH Production	or Method Determined to Casing Size: 13.3  or Method Determined	ft <sup>3</sup> d: VISUAL  75" & 9.625  ft <sup>3</sup>
7.625" 39# semi-FJ in 8.75" hole 8871' - 14424' TOC (460 sx) = 8871' (CBL)  Devonian 6.75" open hole 14424' - 15250'  TD 15250'	Cemented with:	Injection I	Casing Size: 7.62!  or  Method Determined  interval 6.75" OPE  to 15,250'  ole; indicate which)	ft <sup>3</sup>

#### INJECTION WELL DATA SHEET

Tub	ing Size: _	5.5"	_Lining Material: IPC
Typ	e of Packer	STAINLESS STEEL &/OR	NICKEL
Pac	ker Setting	g Depth: 14,324' - 14,424	
Oth	er Type of	Tubing/Casing Seal (if applicable	e):
		Addi	tional Data
1.	Is this a n	new well drilled for injection?	No
	If no, for	what purpose was the well original	ally drilled?
	-		
2.	Name of	the Injection Formation:DEVON	IAN
3.	Name of	Field or Pool (if applicable):SW	D; DEVONIAN (POOL CODE 96101)
4.	intervals	vell ever been perforated in any oth and give plugging detail, i.e. sacks	her zone(s)? List all such perforated s of cement or plug(s) used.
	NO		
5.		100 market	zones underlying or overlying the proposed
		DELAWARE (4,031'), BON (11,821'), & MORROW (1	E SPRING (6,578'), WOLFCAMP (9,871'), 2,753')
	UNDER:	none	





0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 mile

TN \*MN 6.5°

District I 1625 N. French Dr., Hobbs, NM 88240 Phone: (575) 393-6161 Fax: (575) 393-0720 District II 811 S. First St., Artesia, NM 88210 Phone: (575) 748-1283 Fax: (575) 748-9720 1000 Rio Brazos Road, Aztec, NM 87410 Phone (505) 334-6178 Fax: (505) 334-6170 1220 S. St. Francis Dr., Santa Fe, NM 87505

Phone: (505) 476-3460 Fax. (505) 476-3462

UL or lot no. Section Township

#### State of New Mexico

#### Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION 1220 South St. Francis Dr.

Form C-102 Revised August 1, 2011 Submit one copy to appropriate District Office

Santa Fe, NM 87505

WELL LOCATION AND ACREAGE DEDICATION

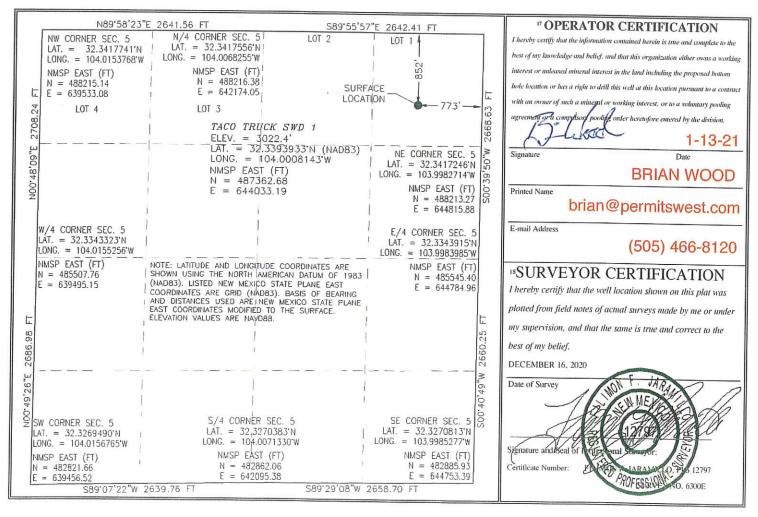
AMENDED REPORT
EXHIBIT A

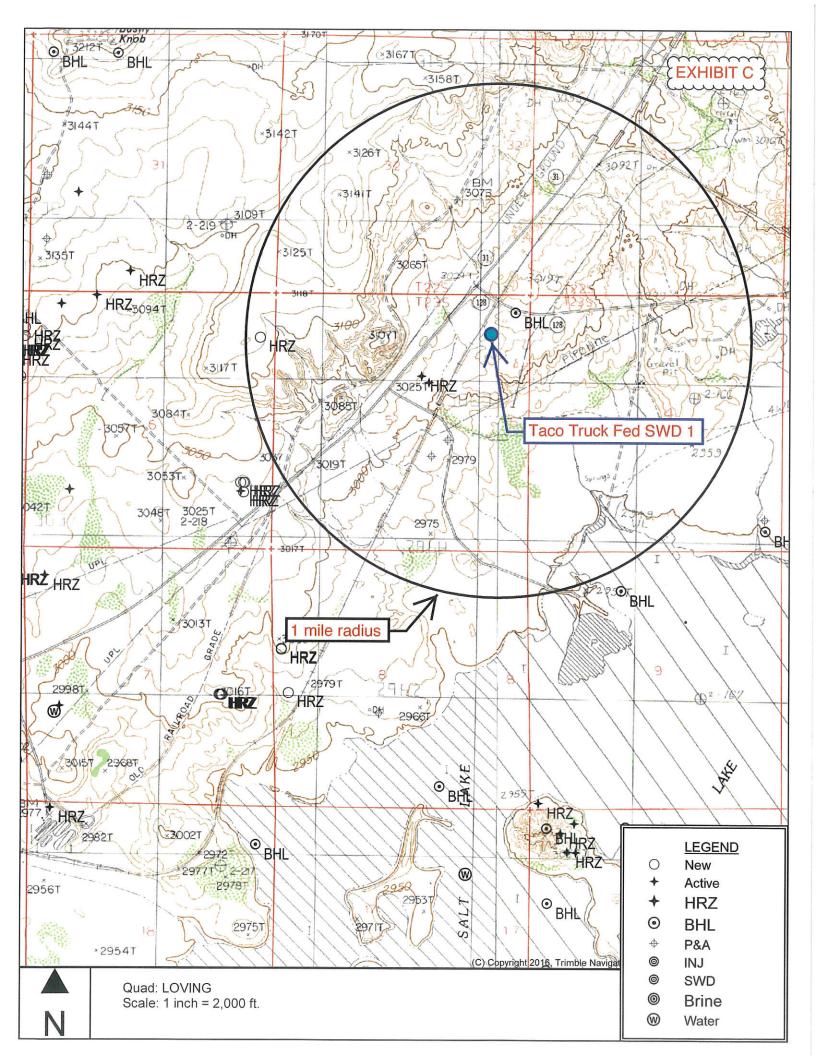
	WELL LOCATION AND ACRE	EAGE DEDICATION PLAT	سسس		
30-015-	<sup>2</sup> Pool Code 96101	SWD; DEVONIAN			
<sup>4</sup> Property Code	<sup>5</sup> Property Na TACO TRUCK		<sup>6</sup> Well Number		
'OGRID №. 372920	<sup>8</sup> Operator Na NOVO OIL & GAS NORTHE		<sup>9</sup> Elevation 3022.4		

Surface Location

UL or lot no. Section Township Range Lot Idn Feet from the North/South line Feet from	face	
Peet from the North/South line Feet from	iacc	
	n the East/West line	County
Dedicated Acres Joint or Infill Consolidation Code Joseph Order N	ío.	

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.





#### 1-MILE RADIUS AREA OF REVIEW WELLS

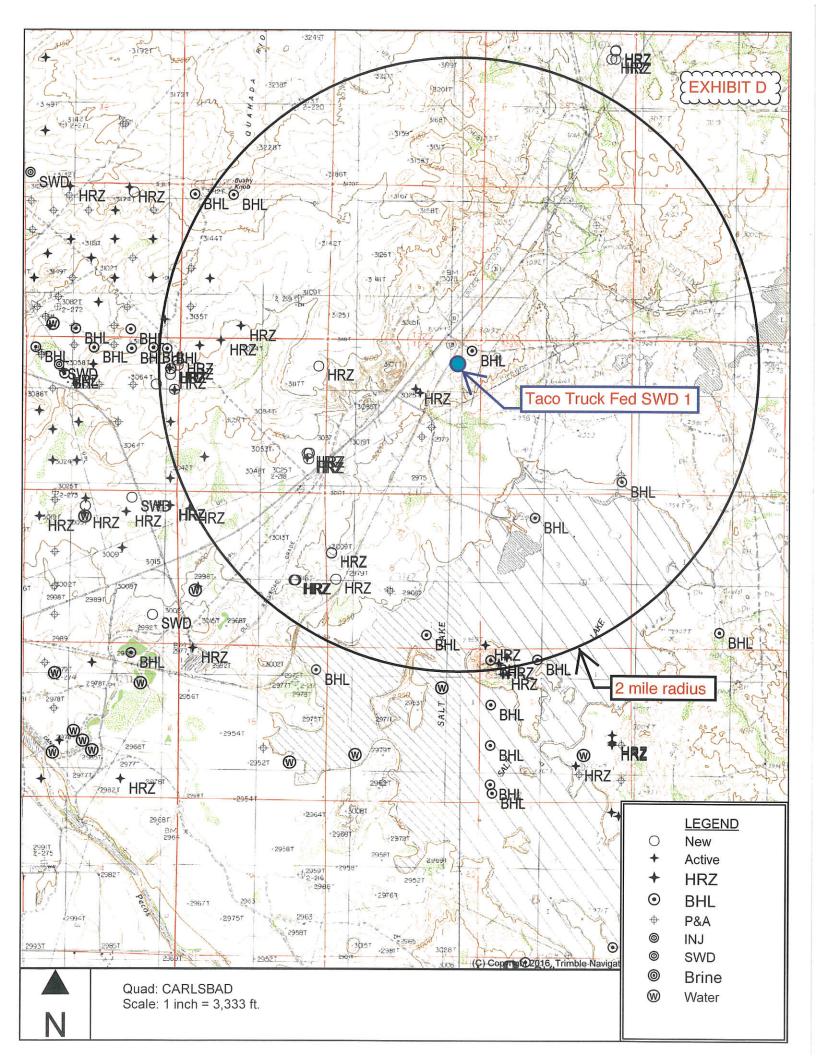
АРІ	OPERATOR	WELL	ТҮРЕ	UNIT- SECTION (SHL)	TVD	ZONE @ TD	FEET FROM TACO TRUCK FED SWD 1
3001548312	Novo	Rana Salada Fed Com 0605 221H	G	I-1	plan 10348	Wolfcamp	126
3001548215	Novo	Rana Salada Fed Com 0605 212H	G	H-1	plan 10119	Wolfcamp	270
3001546076	Novo	Ranaa Salada Fed Com 0605 121H	0	I-1	plan 8241	Bone Spring	522
3001548246	Novo	Rana Salada Fed Com 0605 235H	0	H-1	plan 8414	Bone Spring	522
3001548245	Novo	Rana Salada Fed Com 0605 232H	G	H-1	plan 9814	Wolfcamp	522
3001546084	Novo	Rana Salada Fed Com 0605 211H	G	l-1	plan 9900	Wolfcamp	522
3001547775	Novo	Rana Salada Fed Com 0605 132H	0	H-1	plan 9931	Bone Spring	666
3001548216	Novo	Rana Salada Fed Com 0605 222H	G	H-1	plan 10349	Wolfcamp	666
3001546085	Novo	Rana Salada Fed Com 0605 231H	G	I-1	10856	Wolfcamp	789
3001548172	Novo	Rana Salada Fed Com 0605 215H	G	H-1	plan 10098	Wolfcamp	1062
3001548163	Novo	Rana Salada Fed Com 0605 135H	0	H-1	plan 9693	Bone Spring	1458
3001548162	Novo	Rana Salada Fed Com 0605 225H	G	H-1	plan 10126	Wolfcamp	1458
3001539283	COG	Road Lizard 5 Federal Com 002H	0	G-5	8666	Bone Spring	1721
3001523389	Novo	Carthel Federal Com 002	G	G-5	13270	Barnett	1795
3001547331	Novo	Rana Salada Fed Com 0504 216H	G	I-6	plan 10149	Wolfcamp	2118
3001546086	Novo	Rana Salada Fed Com 0504 133H	0	I-6	plan 9761	Bone Spring	2250
3001548889	Novo	Rana Salada Fed Com 0504 236H	G	I-6	plan 11004	Wolfcamp	2250
3001526446	Bird Creek	Carthel Fed 001	P&A	J-5	6590	Bone Spring	2379

#### 1-MILE RADIUS AREA OF REVIEW WELLS

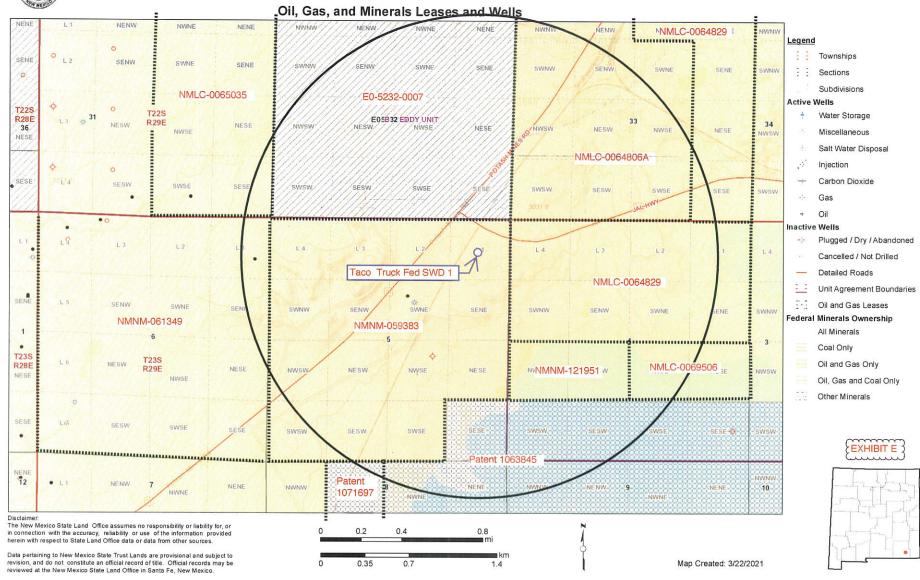
parameter and the second							
3001548892	Novo	Rana Salada Fed Com 0504 136H	0	I-6	plan 9474	Bone Spring	2514
1548891	Novo	Rana Salada Fed Com 0504 226H	G	I-6	plan 10319	Wolfcamp	2514
3001522994	Coronado	Carthel Fed Com 001	P&A	J-5	3163	Bell Canyon	2823
3001548247	Novo	Rana Salada Fed Com 0504 213H	G	I-6	plan 10149	Wolfcamp	2910
3001546087	Novo	Rana Salada Fed Com 0504 214H	G	I-6	plan 9944	Wolfcamp	3174
3001548890	Novo	Rana Salada Fed Com 0504 233H	G	P-6	plan 11004	Wolfcamp	3174
3001548392	Novo	Rana Salada Fed Com 0504 223H	G	P-6	plan 10319	Wolfcamp	3306
3001548243	Novo	Rana Salada Fed Com 0605 124H	0	P-1	plan 8648	Bone Spring	4098
3001546088	Novo	Rana Salada Fed Com 0504 234H	G	P-6	10932	Wolfcamp	4098
3001548171	Novo	Rana Salada Fed Com 0504 224H	G	P-6	plan 10319	Wolfcamp	4098
3001546077	Novo	Rana Salada Fed Com 0504 134H	0	P-6	plan 9759	Bone Spring	4098
3001548153	Novo	Rana Salada Fed Com 0106 233H	G	I-2	plan 9500	Wolfcamp	4705
3001548654	Novo	Astrodog Fed Com 0809 231H	G	D-8	plan 10810	Wolfcamp	4758
3001548234	Novo	Rana Salada Fed Com 0106 216H	G	H-2	plan 9765	Wolfcamp	5097
3001548546	Novo	Rana Salada Fed Com 0106 213H	G	I-2	plan 10515	Wolfcamp	5097
3001548170	ВТА	Ochoa 8703 Federal Com 001H	G	H-12	plan 10532	Wolfcamp	5125

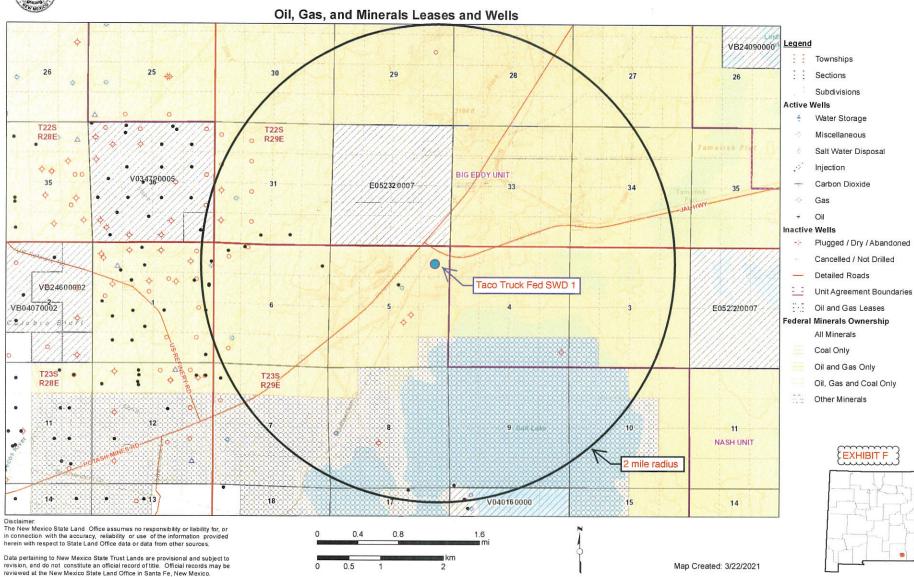
#### 1-MILE RADIUS AREA OF REVIEW WELLS

3001548232	Novo	Rana Salada Fed Com 0106 136H	0	H-2	plan 9585	Bone Spring	5169
3001537615	ВТА	Culebra BLV Federal 001H	0	D-7	3130	Delaware	5211
3001548653	Novo	Astrodog Fed Com 0809 241H	G	D-8	plan 10683	Wolfcamp	5233
3001548237	Novo	Rana Salada Fed Com 0106 226H	G	H-2	plan 9980	Wolfcamp	5274
3001522701	Enron	Teledyne 4 Com 001	P&A	P-4	13399	Atoka	6858









API	Section	Township	Range	Formation	TDS	Sodium	Calcium	Iron	Magnesium	Chloride	Bicarbonate	Sulfate
3001522686	25	235	28E	Atoka	236539					138000	2370	3950
3001522686	25	23S	28E	Atoka	217050					128000	1030	3300
3001538059	16	235	29E	Avalon Upper	154164	54960	798	35	203	92021	3660	0
3001538059	16	235	29E	Avalon Upper	154965	58687	719	54	131	91118	1671	1502
3001503691	24	235	29E	Bone Spring	271010					168800	130	100
3001541148	16	235	29E	Bone Spring 1st Sand	152943	54184	1409	16	275	92807	2306	0
3001541149	16	235	29E	Bone Spring 1st Sand	153042	53896	1294	0	273	92918	2708	0
3001541150	16	235	29E	Bone Spring 1st Sand	146425	55118	1445	11	313	84786	2660	0
3001540038	16	235	29E	Bone Spring 1st Sand	153751	57591	1198	10	244	91697	952	755
3001541090	16	245	27E	Bone Spring 2nd Sand	179420	56191	7263	34	907	112857	146	573
3001541090	16	245	27E	Bone Spring 2nd Sand	176589	56606	7257	42	920	109722	146	0
3001541090	16	245	27E	Bone Spring 2nd Sand	179141	59469	7527	41	944	109123	73	0
3001541887	19	24S	27E	Bone Spring 2nd Sand	193786	67996	3050	50	456	119000	130	34
3001541887	19	245	27E	Bone Spring 2nd Sand	177820	60299	5557	50	721	108941	366	0
3001541887	19	24S	27E	Bone Spring 2nd Sand	203718	70835	3256	51	483	125605	144	34
3001541887	19	24S	27E	Bone Spring 2nd Sand	312558	120501	1427	43	363	186000	201	3947

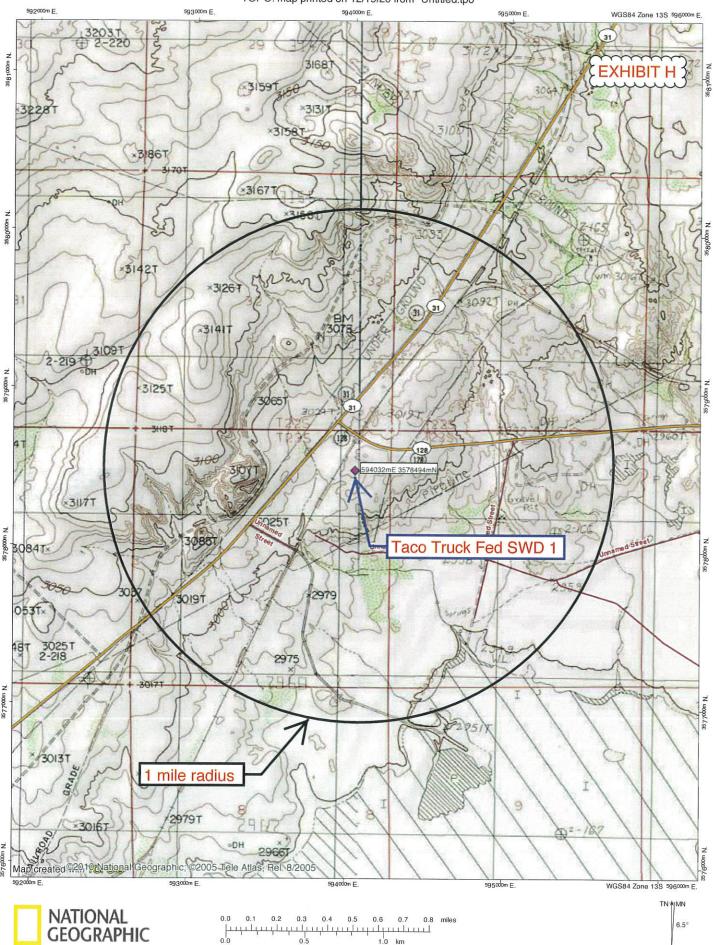
API	Section	Township	Range	Formation	TDS	Sodium	Calcium	Iron	Magnesium	Chloride	Bicarbonate	Sulfate
3001541887	19	24S	27E	Bone Spring 2nd Sand	312550	120501	1427	43	363	186000	201	0
3001541145	32	24S	27E	Bone Spring 2nd Sand	193316	59945	8288	64	1066	120600	171	17
3001541145	32	245	27E	Bone Spring 2nd Sand	205799	64141	9203	68	1165	128749	122	17
3001541145	32	245	27E	Bone Spring 2nd Sand	197760	61580	8481	69	1114	123850	146	0
3001541145	32	245	27E	Bone Spring 2nd Sand	127682	43934	2004	31	394	77098	195	0
3001541145	32	245	27E	Bone Spring 2nd Sand	203230	65824	9280	59	1154	124269	49	0
3001527528	3	22S	28E	Delaware	162875	50506	13004	0	3318	109783	417	1672
3001528736	3	22S	28E	Delaware	158759	52748	10474	20	2658	107057	270	1465
3001521959	7	22S	28E	Delaware	118293					69100	134	3800
3001521959	7	22S	28E	Delaware	124945					73100	139	3900
3001524933	10	22S	28E	Delaware	164679	53597	12008	30	2967	112250	271	1107
3001525303	10	22S	28E	Delaware	116788	46035	1560	2	728	74967	395	1622
3001521618	18	22S	28E	Delaware	129878					77300	439	2600
3001521619	18	225	28E	Delaware	126911					74800	525	3300
3001521766	18	22S	28E	Delaware	123893					74100	671	2000
3001521765	18	22S	28E	Delaware	124756					74500	342	2200
3001520918	18	22S	28E	Delaware	128431					76200	98	3200
3001521504	19	22S	28E	Delaware	127652					76200	415	2600
3001521504	19	22S	28E	Delaware	122782					73800	120	2100
3001521844	19	225	28E	Delaware	130991					78000	586	1800
3001522595	5	23S	28E	Delaware	133440					80500	303	2100
3001524589	21	23S	28E	Delaware	202807	60819	20578	3	4029	143136	39	214
3001501121	9	24S	27E	Delaware	95055					58570	95	187

API	Section	Township	Range	Formation	TDS	Sodium	Calcium	Iron	Magnesium	Chloride	Bicarbonate	Sulfate
3001501126	15	245	27E	Delaware	301812					189600	192	2040
3001526891	3	23S	28E	Delaware- Brushy Canyon	228167	81632	23470	36		167300	73	149
3001526540	11	235	28E	Delaware- Brushy Canyon	244866	91561	21510	102		179250	73	120
3001526527	11	23S	28E	Delaware- Brushy Canyon	283902	77440	39540	37	6397	211161	73	243
3001526496	11	235	28E	Delaware- Brushy Canyon	307701	96917	34318	47	5393	228593	26	505
3001526527	11	23S	28E	Delaware- Brushy Canyon	297557	90602	35089	63	4688	218632	50	619
3001526293	14	23\$	28E	Delaware- Brushy Canyon	203960	69638	23562	77		148750	537	149
3001527173	34	235	28E	Delaware- Brushy Canyon	101919	34645	5773	33	1198	67290	41	229
3001527173	34	23S	28E	Delaware- Brushy Canyon	255443	113016	2128	592	302	179189	913	1477
3001536078	16	235	29E	Delaware- Brushy Canyon	298475	74542	32308	52	4723	182394	25	3

API	Section	Township	Range	Formation	TDS	Sodium	Calcium	Iron	Magnesium	Chloride	Bicarbonate	Sulfate
3001536078	16	235	29E	Delaware- Brushy Canyon	303155	76908	33274	62	4821	183875	610	0
3001536078	16	23S	29E	Delaware- Brushy Canyon	273399	77650	20696	44	3301	168200	85	454
3001536461	22	23S	29E	Delaware- Brushy Canyon	297620	71507	31763	61	4691	186000	188	0
3001536738	22	23S	29E	Delaware- Brushy Canyon	288731	69567	31996	59	4781	179021	122	0
3001535073	22	23S	29E	Delaware- Brushy Canyon	108093	72995	26487	284	4547			
3001536461	22	23\$	29E	Delaware- Brushy Canyon	302545	72865	32249	56	4837	188800	37	0
3001536738	22	235	29E	Delaware- Brushy Canyon	294876	71940	32645	53	4970	181883	61	0
3001536461	22	23S	29E	Delaware- Brushy Canyon	292358	68893	31112	55	4509	184250	244	0
3001536738	22	235	29E	Delaware- Brushy Canyon	292239	69172	31472	52	4557	183597	122	0

API	Section	Township	Range	Formation	TDS	Sodium	Calcium	Iron	Magnesium	Chloride	Bicarbonate	Sulfate
3001535073	22	235	29E	Delaware- Brushy Canyon	303550	80233	27451	49	4197	187467	104	331
3001537371	22	235	29E	Delaware- Brushy Canyon	279275	78992	21728	25	3407	172189	183	177
3001540826	31	23\$	29E	Delaware- Brushy Canyon	297841	79092	29745	70	4417	180802	85	0
3001540827	31	23S	29E	Delaware- Brushy Canyon	295110	76800	28512	60	4245	181795	73	0
3001541963	31	23S	29E	Delaware- Brushy Canyon	296788	80278	29889	65	4475	178388	73	0
3001503691	24	235	29E	Devonian	64582					37500	610	1700
3001503691	24	23S	29E	Devonian	56922					29000	1740	4980
3001520157	30	225	28E	Morrow	53480					32300	476	58
3001522886	8	23S	28E	Morrow	27040	8664	1173	553	129	16624	40	147
3001522886	8	235	28E	Morrow	6804	2064	329	154	39	3939	56	209
3001522886	8	235	28E	Morrow	7360	1292	422	1059	56	4158	304	8
3001522677	22	23S	28E	Morrow	278468					166000	78	3400
3001522553	17	235	29E	Morrow	62523					37600	142	810
3001501132	27	245	27E	Penn.	48387					26570	1505	2263
3001536108	17	245	27E	Wolfcamp	108205	35111	4480	29	628	65927	146	0
3001537763 3001537763	29 29	24S 24S	27E 27E	Wolfcamp Wolfcamp	102136 100995	30415 28702	5312 5342	40 46	644 620	62813 63450	183 268	. 0

#### TOPO! map printed on 12/19/20 from "Untitled.tpo"



12/19/20



#### New Mexico Office of the State Engineer

## EXHIBIT H

### Water Column/Average Depth to Water

(A CLW#### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned,

C=the file is

closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

		POD Sub-		Q	Q	Q								Water
POD Number C 02792	Code	<b>basin</b> CUB	County ED			4	Sec 04	Tws 23S	Rng 29E	<b>X</b> 594868	Y 3577336*	DistanceDept 1428	hWellDe 200	epthWater Column
<u>C 02793</u>		CUB	ED		4	3	04	23S	29E	594868	3577336*	1428	100	1610 m
<u>C 02806</u>		CUB	ED	•••	1	1	09	23S	29E	594473	3576927*	1627	100	= 1 mile
<u>C 02807</u>		CUB	ED		1	1	09	23S	29E	594473	3576927*	1627	100	
<u>C 02804</u>		CUB	ED		2	1	80	23S	29E	593262	3576905*	1765	100	
<u>C 02805</u>		CUB	ED		2	1	80	23S	29E	593262	3576905*	1765	100	
C 02743		CUB	ED	2	1	4	34	22S	29E	596989	3579473*	3114	377	

Average Depth to Water:

Minimum Depth:

Maximum Depth:

--

Record Count: 7

UTMNAD83 Radius Search (in meters):

Easting (X): 594032

Northing (Y): 3578494

Radius: 3220

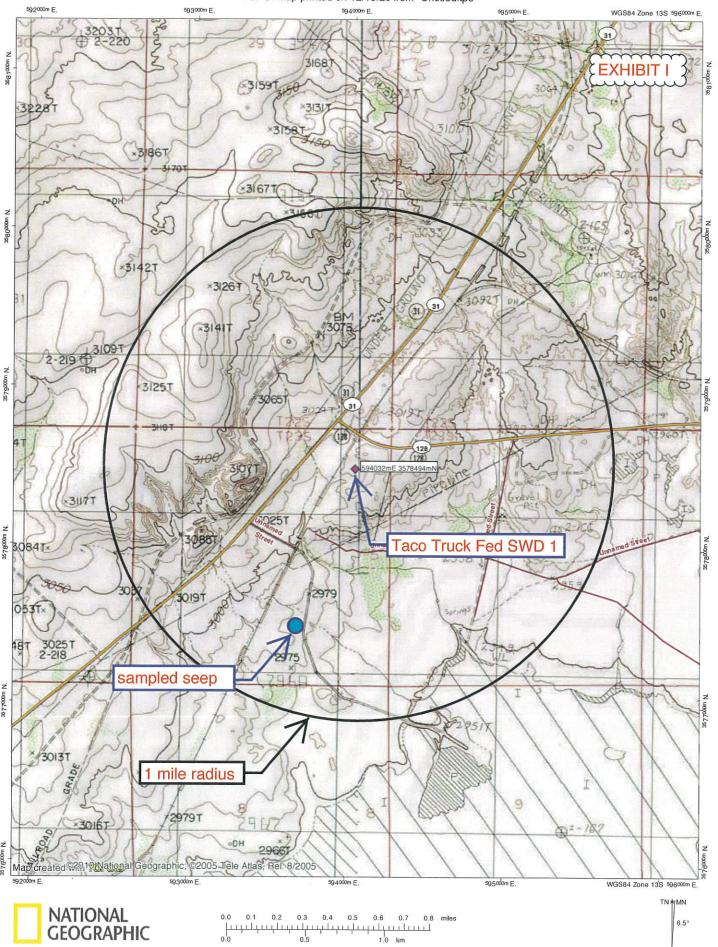
\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

5/30/21 10:59 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

#### TOPO! map printed on 12/19/20 from "Untitled.tpo"



12/19/20



#### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 5/7/2021

**CLIENT:** Permits West

Client Sample ID: Sec 5 Seep

Project: T Truck

Collection Date: 4/27/2021 1:55:00 PM

**Lab ID:** 2104B76-001

Matrix: AQUEOUS

Received Date: 4/28/2021 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Anal	lyzed	Batch
EPA METHOD 1664B							Analyst:	KMN
N-Hexane Extractable Material	ND	9.08		mg/L	1	5/5/2021 4	:34:00 PM	59819
EPA METHOD 300.0: ANIONS							Analyst:	CAS
Chloride	78000	5000	*	mg/L	1E+	4/29/2021	10:50:34 PM	A77057
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst:	МН
Total Dissolved Solids	129000	1000	*D	mg/L	1	4/30/2021	5:00:00 PM	59705

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 1 of 4

#### **QC SUMMARY REPORT**

#### WO#: 2104B76

#### Hall Environmental Analysis Laboratory, Inc.

07-May-21

Client:

Permits West

Project:

T Truck

Sample ID: MB-59819

SampType: MBLK

TestCode: EPA Method 1664B

Client ID: **PBW** 

Batch ID: 59819

RunNo: 77203

Units: mg/L

Prep Date: 5/5/2021

Analysis Date: 5/5/2021

10.0

SeqNo: 2737669

%RPD

%RPD

Analyte

PQL ND

35.6

Result

35.2

SPK value SPK Ref Val %REC

HighLimit

Qual

N-Hexane Extractable Material

SampType: LCS

TestCode: EPA Method 1664B

LowLimit

Client ID: LCSW

Sample ID: LCS-59819

Batch ID: 59819

RunNo: 77203

89.0

114

Prep Date:

5/5/2021 Analysis Date: 5/5/2021 SeqNo: 2737670

Units: mg/L

Analyte

**PQL** SPK value SPK Ref Val

%REC

LowLimit HighLimit

78

**RPDLimit** 

**RPDLimit** 

Qual

N-Hexane Extractable Material Sample ID: LCSD-59819

Client ID: LCSS02

SampType: LCSD

TestCode: EPA Method 1664B

RunNo: 77203

Prep Date: 5/5/2021

10.0

SeqNo: 2737671

Units: mg/L

Analyte

Batch ID: 59819 Analysis Date: 5/5/2021

SPK value SPK Ref Val

%REC

LowLimit HighLimit %RPD

**RPDLimit** Qual

N-Hexane Extractable Material

PQL 10.0

40.00

40.00

0

88.0

1.13

20

Qualifiers:

Value exceeds Maximum Contaminant Level.

Sample Diluted Due to Matrix

Holding times for preparation or analysis exceeded Not Detected at the Reporting Limit ND

Analyte detected in the associated Method Blank

Value above quantitation range

Analyte detected below quantitation limits

Sample pH Not In Range Reporting Limit

Page 2 of 4

Practical Quanitative Limit POL

% Recovery outside of range due to dilution or matrix

#### **QC SUMMARY REPORT**

#### WO#: 2104B76

#### Hall Environmental Analysis Laboratory, Inc.

07-May-21

Client:

Permits West

Project:

T Truck

Sample ID: MB

SampType: mblk

TestCode: EPA Method 300.0: Anions

Client ID:

Batch ID: A77057

RunNo: 77057

Analysis Date: 4/29/2021

Prep Date:

SeqNo: 2731559

Units: mg/L

%RPD

%RPD

Analyte

SPK value SPK Ref Val %REC LowLimit

HighLimit

**RPDLimit** 

Qual

Chloride

ND 0.50

Sample ID: LCS

SampType: Ics

TestCode: EPA Method 300.0: Anions

Client ID: LCSW

Batch ID: A77057

RunNo: 77057

Prep Date:

Analysis Date: 4/29/2021

SeqNo: 2731560

Units: mg/L

Analyte

Result PQL

SPK value SPK Ref Val

96.4

%REC LowLimit

HighLimit 110

Qual

Chloride

4.8

0.50

5.000

0

90

**RPDLimit** 

Qualifiers:

Value exceeds Maximum Contaminant Level.

Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

Analyte detected in the associated Method Blank

Value above quantitation range

Analyte detected below quantitation limits

Sample pH Not In Range RL Reporting Limit

Page 3 of 4

#### **QC SUMMARY REPORT**

## WO#:

#### Hall Environmental Analysis Laboratory, Inc.

07-May-21

Client:

Permits West

Project:

T Truck

Sample ID: MB-59705

SampType: MBLK

TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: PBW

Batch ID: 59705

RunNo: 77074

Prep Date: 4/29/2021

Analysis Date: 4/30/2021

SeqNo: 2732126

Units: mg/L

%RPD

%RPD

Analyte

SPK value SPK Ref Val %REC LowLimit

HighLimit

**RPDLimit** 

Qual

Total Dissolved Solids

ND 20.0

Sample ID: LCS-59705

SampType: LCS

TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: LCSW

Prep Date: 4/29/2021

Batch ID: 59705 Analysis Date: 4/30/2021 RunNo: 77074

SeqNo: 2732127

Units: mg/L

Analyte

PQL SPK value SPK Ref Val %REC

HighLimit LowLimit

**RPDLimit** 

Qual

80

Total Dissolved Solids

120

985 20.0 1000 0 98.5

Qualifiers:

Value exceeds Maximum Contaminant Level

Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

Practical Quanitative Limit PQL

% Recovery outside of range due to dilution or matrix

Analyte detected in the associated Method Blank

Value above quantitation range

Analyte detected below quantitation limits

Sample pH Not In Range RL Reporting Limit

Page 4 of 4

NOVO OIL & GAS NORTHERN DELAWARE, LLC TACO TRUCK FED SWD 1 852' FNL & 773' FEL SEC. 5, T. 23 S., R. 29 E., EDDY COUNTY, NM

I. Goal is to drill a 15,250' deep saltwater disposal well on BLM. Disposal interval will be 14,420' – 15,250' in the SWD; Devonian (96101). See Exhibit A for C-102 and map. APD was filed with BLM in January 2021. Well will initially handle Novo produced water, but may handle others' water later.

II. Operator: Novo Oil & Gas Northern Delaware, LLC [OGRID 372920] Operator phone number: (405) 286-4391 Operator address: 1001 West Wilshire Blvd., #206, Oklahoma City, OK 73116

Contact for Application: Brian Wood (Permits West, Inc.) Phone: (505) 466-8120

III. A. (1) Lease (BLM): NMNM-059383 Lease Size: 601.92 acres Lease Area: Lots 1-4, S2NE, SW4, NESE, & W2SE Sec. 5, T. 23 S., R 29 E.

Well name and number: Taco Truck Fed SWD 1 Location: 852' FNL & 773' FEL Section 5, T. 23 S., R. 29 E.

A. (2) Surface casing (20", 94#, J-55, BTC) will be set at 438' in a 26" hole and cemented to GL with 717 sacks (100% excess).

First intermediate casing (13.375", 54.5#, HCK-55, BTC) will be set at 2,869' in a 20" hole and cemented to GL with 1,281 sacks ( $\geq$ 20% excess).

Second intermediate casing (9.625", 40#, P-110 EC, BTC) will be set at 9,871' in a 12.25" hole and cemented to GL with 2,059 sacks ( $\geq$ 50% excess).

Production liner (7.625", 39#, P-110, VAM semi-FJ <7.906") will be set from 8,871' to 14,424' in an 8.75" hole and cemented to 8,871' (CBL) with 460 sacks. ID is 6.625" (Exhibit B).

A 6.75" open hole will be drilled from 14,424' to 15,250'.



# NOVO OIL & GAS NORTHERN DELAWARE, LLC TACO TRUCK FED SWD 1 852' FNL & 773' FEL SEC. 5, T. 23 S., R. 29 E., EDDY COUNTY, NM

- A. (3) Tubing will be IPC lined, 5.5", 20#, P-110 EC, BTC. Setting depth will be  $\geq 14,424$ '. (Disposal interval will be 14,424' to 15,250'.)
- A. (4) A stainless steel and/or nickel packer will be set at between 14,324' and 14,424' (top of the open hole which will be at 14,424').
- B. (1) Disposal zone will be the Devonian (SWD; Devonian (96101) pool). Estimated fracture gradient is from  $\approx 0.57$  to  $\approx 0.63$  psi per foot.
- B. (2) Disposal interval will be open hole from 14,424' to 15,250'.
- B. (3) Well has not been drilled. It will be drilled as a saltwater disposal well.
- B. (4) No perforated intervals are in the well.
- B. (5) Thirty-seven well bores have approval in the 1-mile area of review (Exhibit C). Seven have been drilled, two of which have been plugged. Remaining 30 wells are approved, but not yet drilled. Deepest TVD of the 37 wells is 13,270'. That well bottomed in the Barnett shale. The wells have or will produce from the Delaware, Bone Spring, Wolfcamp, Morrow, and Atoka. All are above the Devonian. No oil or gas zone is below the Devonian in the area of review.
- IV. This is not an expansion of an existing injection project. It is disposal only.
- V. Exhibit C shows the SHLs and tabulates the 37 wellbores within a 1-mile radius. Deepest TVD is 13,270' (Barnett shale). Closest approved SWD; Devonian well (30-015-43596) is 2-1/3 miles southwest in B-12-23s-28e. However, both the APD and SWD Administrative Order approvals have expired. No pending SWD; Devonian applications are closer. Closest Devonian oil or gas well is >6 miles away. Exhibit D shows wells within a 2-mile radius.



NOVO OIL & GAS NORTHERN DELAWARE, LLC TACO TRUCK FED SWD 1 852' FNL & 773' FEL SEC. 5, T. 23 S., R. 29 E., EDDY COUNTY, NM

All leases within a one-mile radius are BLM, fee, or NMSLO. Exhibit E shows and tabulates all the leases within a mile. Exhibit F shows all lessors within a two-mile radius. Two-mile radius leases are BLM, fee, or NMSLO.

VI. No Devonian penetrator is within a mile. Deepest well within a mile is 13,270'. That well bottomed in the Barnett shale.

- VII. 1. Average injection rate will be ≈25,000 bwpd. Maximum injection rate will be 30,000 bwpd.
  - 2. System will be open and closed. Water will both be trucked and piped.
  - 3. Average injection pressure will be  $\approx 2,500$  psi Maximum injection pressure will be 2,884 psi (= 0.2 psi/foot x 14,424' (top of open hole)).
  - 4. Disposal water will be produced water, mainly from Bone Spring, Delaware, and Wolfcamp wells. Novo has 23 approved Bone Spring wells and 68 approved Wolfcamp wells within a 6-mile radius. More approvals are pending. The well will also take other Permian Basin waters. A summary of produced water analyses from T. 23 S., R. 29 E. and nearby townships is in Exhibit G. Devonian analyses from a well (30-015-03691) 4-3/4 mile southeast found TDS ranged from 56,922 to 64,582 mg/l. Compatibility problems are not expected. At least 22,184,091 barrels of water have been disposed over the last 10 years in a Devonian SWD well (30-015-39400) that is 4-1/4 miles southeast.
  - 5. No Devonian production is within >6 miles.

VIII. The Devonian (≈836' thick) is comprised of limestone and dolomite. Adjacent confining layers are the Woodford shale above and Simpson shale below. Closest possible underground source of drinking water above the proposed disposal interval is the Quaternary at the surface.

According to State Engineer Office (SEO) records (Exhibit H), four water wells are within 2 miles. All were supposedly drilled in 2000-2001 as monitoring wells. Deepest is 377'. Only one (C 02805/02805) was found during January 7



SEC. 5, T. 23 S., R. 29 E., EDDY COUNTY, NM

and April 27, 2021 field inspections. It had been P&A. Two (C 02792/02793 and C 02806/02807) plot under Salt Lake. One well (C 02743) plots above the Lake, but could not be found.

A broken dry windmill not in SEO records was found 1-1/4 mile northeast in Section 33. A seep in a borrow pit 0.7 mil southwest in Section 5 was sampled. No underground source of drinking water is below the proposed disposal interval.

Formation tops are:

Quaternary = 0' Rustler anhydrite = 368' Lamar limestone = 2943' Cherry Canyon sandstone = 4031' Brushy Canyon sandstone = 5195' Bone Spring limestone = 6578' Wolfcamp carbonate = 9871' Strawn sandstone = 11648' Atoka sandstone = 11821' Morrow sandstone = 12753' Barnett shale = 13234' Mississippian limestone = 13708' Woodford shale = 14302' Devonian carbonate = 14414' disposal interval = 14424' - 15250' TD = 15250'(Silurian = 15545')

Four water wells, all monitoring, are within a 2-mile radius according to State Engineer records (Exhibit G). Only one was found during two 2021 inspections and it had been plugged. There will be >2 miles of vertical separation and shale, salt, and anhydrite intervals between the bottom of the only likely underground water source (Quaternary) and the top of the Devonian.

IX. The well will be stimulated with acid.



NOVO OIL & GAS NORTHERN DELAWARE, LLC TACO TRUCK FED SWD 1 852' FNL & 773' FEL SEC. 5, T. 23 S., R. 29 E., EDDY COUNTY, NM

- X. Gamma MWD and CBL logs will be run.
- XI. No water wells were found within 2 miles during two 2021 field inspections. A seep in a borrow pit 0.7 mile southwest in Section 5 was sampled (Exhibit I).
- XII. Novo Oil & Gas Northern Delaware, LLC (Exhibit J) is not aware of any geologic or engineering data that may indicate the Devonian is in hydrologic connection with any underground sources of water. There are 164 active Devonian SWD wells, 8 active Devonian water injection wells, and 1 active Devonian AGI well in New Mexico. There are no faults within the immediate area.
- XIII. Legal ad (Exhibit K) was published in the Carlsbad newspaper on June 4, 2021. Notice (this application) is being sent (Exhibit L) to the surface owner (BLM), lessors, lessees of record, operating right holders, and well operators within 1-mile.







NM Oil Conservation Division 1220 S. St. Francis Dr. Santa Fe, NM 8705

Re: Geology Statement
Novo Oil & Gas Northern Delaware, LLC
Taco Truck Fed SWD No. 1
Section 5, T. 23S, R. 29E
Eddy County, New Mexico

To whom it may concern:

Publicly available geologic and engineering data related to the proposed well have been thoroughly reviewed, and no evidence for open faults or any other hydrologic connection between the proposed Devonian injection zone and any underground sources of drinking water has been found. Please see the attached seismic risk assessment for additional information.

Sincerely,

Cory Walk Geologist



# Seismic Risk Assessment Novo Oil & Gas Northern Delaware, LLC Taco Truck Fed SWD No. 1 Section 5, Township 23 South, Range 29 East Eddy County, New Mexico

Cory Walk, M.S.

Cory Walk

Geologist

Permits West Inc.

June 1, 2021



#### **GENERAL INFORMATION**

Taco Truck Fed SWD No. 1 is located in the NE 1/4, section 5, T23S, R29E, about 6.5 miles northeast of Loving, NM in the Permian Basin. Novo proposes the injection zone to be within the Devonian Formation through an open hole from 14,424'-15,250' below ground surface. This report assesses any potential concerns relating to induced seismicity along deep penetrating Precambrian faults or the connection between the injection zone and known underground potable water sources.

#### SEISMIC RISK ASSESSMENT

#### Historical Seismicity

Searching the USGS earthquake catalog resulted in no (0) earthquakes above a magnitude 2.5 within 6 miles (9.7 km) of the proposed deep disposal site since 1970 (Fig. 1). The nearest earthquake occurred on March 18, 2012 about 7.53 miles (~12.1 km) southeast of the proposed SWD site and had a magnitude of 3.1.

#### Basement Faults and Subsurface Conditions

A structure contour map (Fig. 1) of the Precambrian basement shows the Taco Truck Fed SWD #1 is approximately 15.5 miles (24.9 km) from the nearest basement-penetrating fault inferred by Ewing et al (1990). Information about known nearby faults based on GIS data from Ruppel et al. (2009) is listed in Table 1.

Snee and Zoback (2018) state, "In the western part of Eddy County, New Mexico,  $S_{Hmax}$  is ~north-south (consistent with the state of stress in the Rio Grande Rift; Zoback and Zoback, 1980) but rotates to ~east-northeast-west-southwest in southern Lea County, New Mexico and the northernmost parts of Culberson and Reeves counties, Texas." Around the Taco Truck Fed SWD site, Snee and Zoback indicate a  $S_{Hmax}$  direction of N035°E and an  $A_{\phi}$  of 0.52, indicating an extensional (normal) stress regime.

Induced seismicity is a growing concern of deep SWD wells. Relatively new software developed by the Stanford Center for Induced and Triggered Seismicity allows for the probabilistic screening of deeply penetrating faults near the proposed injection zone (Walsh et al., 2016; Walsh et al., 2017). This software uses parameters such as stress orientations, fault strike/dip, injection rates, fault friction coefficients, etc. to estimate the potential for fault slip. Using the best available data as input parameters (Table 2) including the subject well injecting at 30,000 bbls/day and all other existing and proposed SWDs within a 6 mile radius also injecting at 30,000 bbls/day (18 total SWD wells), the Fault Slip Potential (FSP) models suggest a sixteen (0.16) percent chance of slip on a nearby fault (fault 2), inferred by Frenzel et al (1988) and Ewing et al. (1990), through the year 2050 (Fig. 2; Table 1). **This model also suggests a pore pressure increase of 2.3 psi on the nearest publicly known fault (Fault 3; Fig. 3; Table 1) by the year 2050.** Geomechanical modeling shows that the primary fault of concern (fault 2) would need a pressure increase of 2009 psi to reach a 100% probability of slip on the fault. Even a 50% probability requires an increase of 348 psi which is far greater than the modeled increase of 0.14 psi (Fig. 3).



#### **GROUNDWATER SOURCES**

Quaternary Alluvium acts as the principal aquifer used for potable ground water near the Taco Truck Fed SWD #1 location (Hendrickson and Jones, 1952). Nicholson and Clebsch (1961) state, "Potable ground water is not available below the Permian and Triassic unconformity but, because this boundary is not easily defined, the top of the Rustler anhydrite formation is regarded as the effective lower limit of 'potable' ground water." Around the proposed SWD, the top of the Rustler Formation lies at a depth of approximately 391 feet bgs.

#### **VERTICAL MIGRATION OF FLUIDS**

Thick permeability barriers exist above (Woodford shale; 115 ft thick) and below (Simpson Group; 268 ft thick) the targeted Devonian injection zone (Plate 2, Comer et al., 1991; Fig. 8, Frenzel et al., 1988). Precambrian structure contours (Ruppel, 2009) show the basement to be at a depth of approximately 16,428' in this area. Therefore, the injection zone lies approximately 1,180' above the Precambrian basement and approximately 14,030' below the previously stated lower limit of potable water at the top of the Rustler anhydrite formation. The stratigraphy suggests that the Woodford Shale and Simpson Group are adequate confining barriers that would prevent the vertical migration of injected fluids.

#### CONCLUDING STATEMENT

After examination of publically available geologic and engineering data, there is no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.



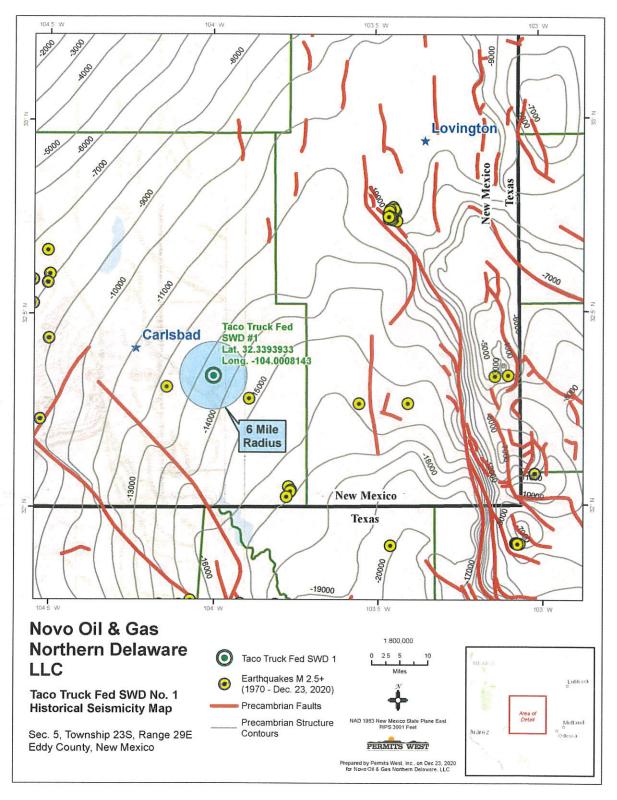


Figure 1. Structural contour map of the Precambrian basement in feet below sea level. Red lines represent the locations of Precambrian basement-penetrating faults (Ewing et al., 1990). Taco Truck Fed SWD #1 well lies ~15.5 miles east of the closest deeply penetrating fault and ~7.5 miles northwest from the closest historic earthquake.



**Table 1: Nearby Basement Fault Information** 

	Distance from proposed				Pore Pressure change
ID	SWD (mi)	Strike (°)	Dip (°)	FSP	after 20 years (psi)
Fault 2	18.7	33	50-90	0.16	0.14
Fault 3	20.4	137	50-90	0.00	2.3

Table 2: Fault Slip Potential model input parameters

		oversian model input parameters
Faults	Value	Notes
Friction Coefficient	0.58	Ikari et al. (2011)
Dip Angle (deg)	70	Snee and Zoback (2018)
Stress		
Vertical stress gradient (psi/ft)	1.1	Hurd and Zoback (2012)
Max Horizontal Stress Direction (deg)	35	Snee and Zoback (2018)
Depth for calculations (ft)	14000	Proposed injection zone
Initial Reservoir Pressure Gradient (psi/ft)	0.7	calculated from mud wt (ppg) used in drilling at these depths
A Phi Parameter	0.52	Snee and Zoback (2018)
Reference Friction Coefficient	0.58	Ikari et al. (2011)
Hydrology		
Aquifer thickness (ft)	800	Proposed injection zone
Porosity (%)	6	
Permeability (mD)	150	
Injection Rate (bbl/day)	30000	Maximum proposed injection rate



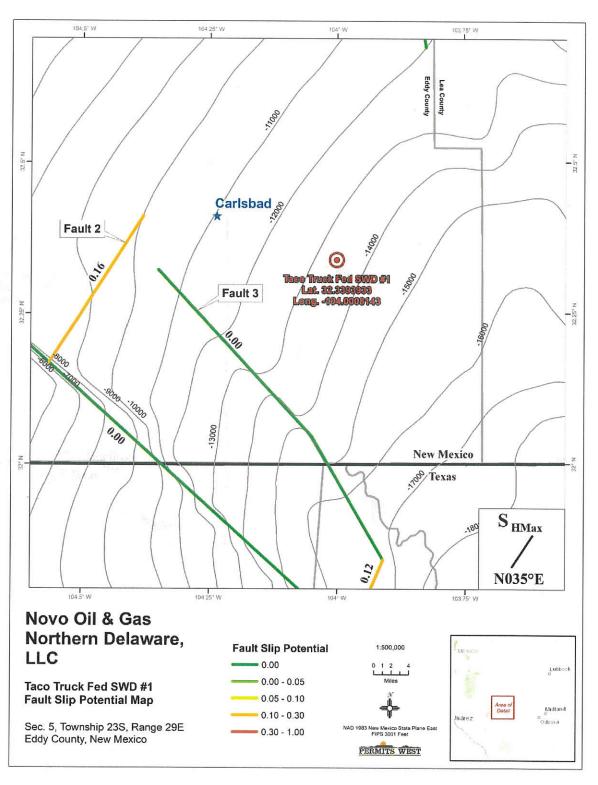


Figure 2. Precambrian fault map of Carlsbad, NM area as mapped by Ewing et al. (1990). Faults are colored based on probability of fault slip as modeled using Fault Slip Potential software (Walsh and Zoback, 2016). Labeled values represent the calculated fault slip potential using the parameters indicated in Table 2. Contours show the top of the Precambrian basement in feet below sea level.



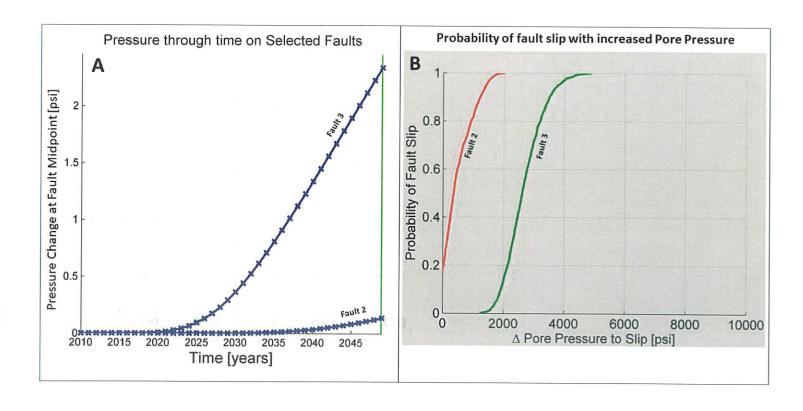


Figure 3. A) Plot showing the modeled change of pore pressure on nearby faults through time as a response to the proposed SWD well. B) Plot showing the required pore pressure increase needed to produce specific probabilities of fault slip on nearby faults.



#### **References Cited**

- Comer, J. B., 1991, Stratigraphic Analysis of the Upper Devonian Woodford Formation, Permian Basin, West Texas and Southeastern New Mexico: The University of Texas at Austin, Bureau of Economic Geology, Report of Investigations No. 201, 63 p.
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 OD
 Weight
 Wall Th.
 Grade
 API Drift
 Connection

 7 5/8 in.
 39.00 lb/ft
 0.500 in.
 P110
 6.500 in.
 VAM® FJL

PIPE PROPERTIES								
Nominal OD	7.625	in.						
Nominal ID	6.625	in.						
Nominal Cross Section Area	11.192	sqin.						
Grade Type		API 5CT						
Min. Yield Strength	110	ksi						
Max. Yield Strength	140	ksi						
Min. Ultimate Tensile Strength	125	ksi						

CONNECTION PROPERTIES								
Connection Type	Prem	ium integral flush						
Connection OD (nom)	7.625	in.						
Connection ID (nom)	6.574	in.						
Make-up Loss	4.803	in.						
Critical Cross Section	7.297	sqin.						
Tension Efficiency	65.2	% of pipe						
Compression Efficiency	26.1	% of pipe						
Internal Pressure Efficiency	100	% of pipe						
External Pressure Efficiency	100	% of pipe						

CONNECTION PERFORMANCES								
Tensile Yield Strength	803	klb						
Compression Resistance	321	klb						
Internal Yield Pressure	12620	psi						
External Pressure Resistance	11080	psi						
Max. Structural Bending	10	°/100 ft						

FIELD TORQUE VALUES								
Min. Make-up torque	9500	ft.lb						
Opti. Make-up torque	10500	ft.lb						
Max. Make-up torque	11500	ft.lb						
Min Shouldering Torque	525	ft.lb						
Max Shouldering Torque	7349	ft.lb						
Min Delta Turn	0.010	Turns						
Max Delta Turn	0.100	Turns						

VAM® FJL (Flush Joint Liner) is a flush integral connection providing maximum clearance with optimum strength for liners, moderate depth casing, and tight-hole tubing strings.

An external seal and an internal seal work independently to achieve sealing against annulus and well bore pressures.

#### Do you need help on this product? - Remember no one knows VAM® like VAM®

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## Affidavit of Publication Ad # 0004762145 This is not an invoice

PERMITS WEST INC 37 VERANO LOOP

SANTA FE, NM 87508-8351

I, a legal clerk of the Carlsbad Current Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

Novo Oil & Gas Northern Delaware, LLC is applying to drill the Taco Truck Fed SWD 1 as a saltwater disposal well. The well is staked at 852 FNL & 773 FEL Sec. 5, T. 23 S., R. 29 E., Eddy County and is 6 miles northeast of Loving, NM. Disposal will be in the Devonian from 14,424' to 15,250'. Maximum injection pressure will be 2,884 psi. Maximum disposal rate will be 30,000 bwpd. Interested parties must file objections or requests for hearing with the NM Oil Conservation Division, 1220 South Saint Francis Dr., Santa Fe, NM 87505 within 15 days. Additional information can be obtained by contacting: Brian Wood, Permits West, Inc., 37 Verano Loop, Santa Fe, NM 87508. Phone number is (505) 466-8120 Current Argus, June 4, 2021 04762145

06/04/2021

// Legal Clerk

Subscribed and sworn before me this June 4, 2021:

State of WI, County of Brown
NOTARY PUBLIC

My commission expires

KATHLEEN ALLEN

Notary Public State of Wisconsin

Ad # 0004762145 PO #: 04762145 # of Affidavits 1

This is not an invoice





September 15, 2021

BLM 620 E. Greene Carlsbad NM 88220

TYPICAL NOTICE

Novo Oil & Gas Northern Delaware, LLC is applying (see attached application) to drill the Taco Truck Fed SWD 1 as a saltwater disposal well. As required by NM Oil Conservation Division (NMOCD) rules, I am notifying you of the following proposal. This letter is a notice only. No action is needed unless you have questions or objections.

Well: Taco Truck Fed SWD 1  $\underline{TD} = 15,250$ '

Proposed Disposal Zone: Devonian (14,424' - 15,250')

Location: 852' FNL & 773' FEL Sec. 5, T. 23 S., R. 29 E., Eddy County, NM

Approximate Location: 6 air miles NE of Loving, NM

<u>Applicant Name:</u> Novo Oil & Gas Northern Delaware, LLC (405) 286-4391 <u>Applicant's Address:</u> 1001 West Wilshire Blvd., #206, Oklahoma City, OK 73116

<u>Submittal Information:</u> Application for a saltwater disposal well will be filed with the NMOCD. If you have an objection, or wish to request a hearing, then it must be filed with the NMOCD within 15 days of receipt of this letter. The New Mexico Oil Conservation Division address is 1220 South St. Francis Dr. Santa Fe, NM 87505. Their phone number is (505) 476-3441. Their e-mail address is: ocd.engineer@state.nm.us

Please call me if you have any questions.

Sincerely,

Brian Wood

