Initial

Application

Part I

Received: <u>12/06/2019</u>

This application is placed in file for record. It MAY or MAY NOT have been reviewed to be determined Administratively Complete

WE4IO-191206-C-1080

Revised March 23, 2017

RECEIVED: 12/6/19

REVIEWER: BLL

TYPE: SWD

APP NO:

pBL1934051302

ABOVE THIS TABLE FOR OCD DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Geological & Engineering Bureau – 1220 South St. Francis Drive, Santa Fe, NM 87505



| THIS CHECKLIST IS MANDATORY FOR ALL ADMINIST | APPLICATION CHECKLIST TRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND |
|---|---|
| | CESSING AT THE DIVISION LEVEL IN SANTA FE |
| Applicant: Longwood Water Management Company, LLC | OGRID Number: 328484 |
| Well Name: Flowers SWD 3 | API: 30-015- |
| Pool: SWD; Devonian | Pool Code: 96101 |
| | TION REQUIRED TO PROCESS THE TYPE OF APPLICATION CATED BELOW |
| 1) TYPE OF APPLICATION: Check those which of A. Location – Spacing Unit – Simultaneous NSL NSP (PROJECT AREA) | Dedication |
| | SWD-2342 |
| [II] Injection – Disposal – Pressure Incre | PC OLS OLM ease – Enhanced Oil Recovery IPI EOR PPR |
| 2) NOTIFICATION REQUIRED TO: Check those w | FOR OCD ONLY |
| A. Offset operators or lease holders | Notice Complete |
| B. Royalty, overriding royalty owners, re C. Application requires published notice D. Notification and/or concurrent app E. Notification and/or concurrent app F. Surface owner | roval by SLO roval by BLM Application Content Complete |
| G. For all of the above, proof of notification. H. No notice required 3) CERTIFICATION: I hereby certify that the information. | ation or publication is attached, and/or, rmation submitted with this application for |
| administrative approval is accurate and cor understand that no action will be taken on t notifications are submitted to the Division. | nplete to the best of my knowledge. I also his application until the required information and |
| Note: Statement must be completed by an | individual with managerial and/or supervisory capacity. |
| | 12-4-19 |
| Brian Wood | Date |
| Print or Type Name | - |
| Thin of Type Name | 505 466-8120 |
| Below | Phone Number |
| Signature | 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? XXXYes No |
|--------|--|
| II. | OPERATOR: LONGWOOD WATER MANAGEMENT COMPANY, LLC |
| | ADDRESS: 5400 LBJ FREEWAY, SUITE 1500, DALLAS TX 75240 |
| | 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. Flowers SWD 3 |
| VII. | Attach data on the proposed operation, including: Devonian (96101) |
| ****** | Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and, 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.). |
| *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 |
| | SIGNATURE: DATE: NOV. 18, 2019 |
| | 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: |

Side 2

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.

Side 2

INJECTION WELL DATA SHEET

| Tul | oing Size: 7" by 5.5" Lining Material: IPC or Fiberglass lined |
|-----|---|
| Ту | pe of Packer: _ STAINLESS STEEL &/OR NICKEL |
| Pac | cker Setting Depth: 16,827' - 16,927' |
| Otl | ner Type of Tubing/Casing Seal (if applicable): |
| | Additional Data |
| 1, | Is this a new well drilled for injection? XXX YesNo |
| | If no, for what purpose was the well originally drilled? |
| 2. | Name of the Injection Formation: _DEVONIAN |
| 3. | Name of Field or Pool (if applicable): SWD; DEVONIAN (POOL CODE 96101) |
| 4. | Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used |
| 5. | Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: |
| | OVER: DELAWARE (3,982'), BONE SPRING (7,921'), WOLFCAMP (11,170') |
| | & PENN (13,500') |
| | UNDER: none |
| | |

Side I

INJECTION WELL DATA SHEET

| ELL LOCATION: 1153' FNL & 858' FWL FOOTAGE LOCATION | D JNIT LETTER | 21 | | 31 E |
|--|--|----------------------------------|--|-----------------------------|
| | ONII LEITEK | SECTION | TOWNSHIP | RANGE |
| WELLBORE SCHEMATIC | | | L CONSTRUCTION DAT ace Casing | <u>A</u> |
| (not to scale) | | 0.611 | | |
| 20" 94# & 106.5# in 20" hole @ 1539" | Hole Size: | 26" | Casing Size:2 | 0" |
| 26 note @ 1539 TOC (2150 sx) = GL | Cemented with: _ | 2150 s | x. or | ft ³ |
| 26" hole @ 1539' TOC (2150 sx) = GL | Top of Cement: _ | SURFACE | Method Determined | d:VISUAL_ |
| | | Interme | ediate Casing | |
| 26" hote @ 1539' TOC (2150 sx) = GL | Hole Size:17 | .5" & 12.25 | Casing Size: 13.3 | 75" & 9.625 |
| TOC (2430 sx) = GL | Cemented with: 2 | 430 & 1860 s | x. <i>or</i> | ft ³ |
| | | | | 1 TATCHAT C O |
| 9.625" 40# in | Top of Cement: S | URFACE & 3832 | Method Determined | 1: VISUAL & C |
| 17.5" hole @ 4032' TOC (2430 sx) = GL 9.625" 40# in 12.25" hole @ 11850' TOC (1860 sx) = 3832' (CBL) | Top of Cement: S | | Method Determined | : VISUAL & C |
| 13.375" 72# in 17.5" hole @ 4032' TOC (2430 sx) = GL 9.625" 40# in 12.25" hole @ 11850' TOC (1860 sx) = 3832' (CBL) | | | ction Casing | |
| 7.625" 33.7# in 8.75" hole | Hole Size: | Produ | ction Casing Casing Size: 7.62 | 5" @ 11,350 |
| ₹ 7.625" 33.7# in 8.75" hole | Hole Size: | 8.75" 530 s | ction Casing Casing Size: 7,62 x. or | 5" @ 11,350 ft³ |
| 7.625" 33.7# in 8.75" hole 11350' - 16927' >16827' Devonian 6.5" open hole | Hole Size: | Production 8.75" 530 s 11,350' | ction Casing Casing Size: 7, 62 | 5" @ 11,350 ft³ |
| 7.625" 33.7# in 8.75" hole packer @ 11350' - 16927' >16827' TOC (530 sx) = 11350' (CBL) Devonian (| Hole Size: Cemented with: Top of Cement: | 8.75" 530 s 11,350' 16,927' | ction Casing Casing Size: 7,62 x. or | 5" @ 11,350 ft³ l:CBL |

PAGE 1

- I. Goal is to drill a 17,871' deep commercial saltwater disposal well on BLM. Disposal interval will be 16,927' 17,871' in the SWD; Devonian (96101). See Exhibit A for C-102 and map.
- II. Operator: Longwood Water Management Company, LLC [OGRID 328484]

Operator phone number: (972) 371-5420

Operator address: 5400 LBJ Freeway, Suite 1500, Dallas TX 75240

Contact for Application: B

Brian Wood (Permits West, Inc.)

Phone: (505) 466-8120

III. A. (1) Lease (BLM): NMNM-138866 Lease Size: 640 acres

Lease Area: all Sec. 21, T. 26 S., R 31 E. Well name and number: Flowers SWD 3

Location: 1153' FNL & 858' FWL Section 21, T. 26 S., R. 31 E.

A. (2) Surface casing (20", 94 & 106.5#, J-55, BTC) will be set at 1,539' in a 26" hole and cemented to GL with 2,150 sacks (based on 50% OH excess).

First intermediate casing (13.375", 72#, N-80, BTC) will be set at 4,032' in a 17.5" hole and cemented to GL with 2,430 sacks (based on 50% OH excess).

Second intermediate casing (9.625", 40#, P-110 EC, BTC) will be set at 11,850' in a 12.25" hole and cemented to 3,832' with 1,860 sacks (based on 35% OH excess). An optional DV tool may be set at ≈4282'.

Third intermediate casing (7.625", 33.7#, P-110HP, USS Liberty FJM) will be set from 11,350' to 16,927' in an 8.75" hole and cemented to 11,350' (CBL) with 530 sacks (based on 10% OH excess).

A 6.5" open hole will be drilled from 16,927' to 17,871'.



PAGE 2

- A. (3) Tubing will be a tapered string. 7", 26#, P-110, BTC fiberglass lined tubing will be run from GL to 11,250'. 5.5", 20#, P-110IC, IPC or fiberglass lined will be run from 11,250' to 16,827'. Setting depth will be ≥16,827'. (Disposal interval will be 16,927' to 17,871'.)
- A. (4) A stainless steel and/or nickel packer will be set at ≥16,827' (top of the open hole which will be at 16,927').
- B. (1) Disposal zone will be the Devonian (SWD; Devonian (96101) pool). Estimated fracture gradient is ≈0.62 to ≈0.68 psi per foot. Variation depends on whether limestone or dolomite.
- B. (2) Disposal interval will be open hole from 16,927' to 17,871'.
- 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) Only zones producing, now or in the past, in the area of review and above the Devonian (16,917') are the Delaware (3,982'), Bone Spring (7,912'), Wolfcamp (11,170'), and Penn (13,500'). 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 B shows and tabulates the 3 existing wells (1 gas + 2 P&A) within a 1-mile radius along with the closest existing well outside of that radius (P&A). Deepest well within a mile is 13,500' TVD. Closest partially approved (APD) SWD; Devonian well (30-025-44569) is 3.75 miles north in H-32-25s-31e. Closest fully approved (AAPD & C-108) SWD; Devonian well (30-025-45223) is 4.01 miles northwest in P-2-26s-30e. (Longwood has applied for a SWD; Devonian well (Jack Hammack Fed SWD 1) 1.81 miles east-northeast in P-15-26s-31e. Approvals are pending). Closest Devonian oil or gas well is >2 miles away. Exhibit C shows all wells within 2-miles.

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



PAGE 3

- VI. No Devonian penetrator is within a mile. Deepest existing or proposed well within a mile is 13,500'. That well bottomed in the Penn.
- VII. 1. Average injection rate will be ≈50,000 bwpd. Maximum injection rate will be 60,000 bwpd.
 - 2. System will be open and closed. Water will both be trucked and piped.
 - Average injection pressure will be ≈2,500 psi
 Maximum injection pressure will be 3,385 psi (= 0.2 psi/foot x 16,927' (top of open hole)).
 - 4. Disposal water will be produced water, mainly from Bone Spring, Delaware, and Wolfcamp wells. There are 36 approved Bone Spring wells, 10 approved Delaware wells, and 61 approved Wolfcamp wells in T. 26 S., R. 31 E. The well will take other Permian Basin waters. A summary of produced water analyses from T. 26 S., R. 31 E. is Exhibit F. Devonian produced water analyses (in mg/L) from wells in T. 25 S., R. 31 E. are in the table below. Compatibility problems are not expected. At least 15,798,856 barrels of water have been disposed in a Devonian; SWD (30-025-43379) that is 4-1/2 miles northeast.

| API | section | unit | TDS (mg/L) | Chloride (mg/L) | Bicarbonate (mg/L) | Sulfate (mg/L) |
|------------|---------|------|---------------|--------------------|-----------------------|-------------------|
| 3001529252 | 1 | L | 128946.5 | 78100 | 317 | 481 |
| 3001529728 | 2 | 1 | 131449.7 | 79220 | 353 | 542 |
| 3001529728 | 2 | I | 85798.5 | 51300 | 59 | 389 |
| 3001529850 | 12 | J | 131449.7 | 79220 | 353 | 542 |
| 3001529252 | 1 | L | 135335.2 | 82003 | 248.9 | 477 |
| 3001529728 | 2 | | 136044.4 | 82374 | 311.1 | 468 |
| 3001529728 | 2 | 1 | 136576.4 | 82850 | 122.4 | 499 |
| 3001529252 | 1 | 14, | 133147.6 | 80547 | 341.6 | 468 |

5. No Devonian production is within >2 miles.



PAGE 4

VIII. The Devonian (estimated 964' thick) is comprised of limestone and dolomite. Closest possible underground source of drinking water above the proposed disposal interval is the Quaternary at the surface. There has been some interest in developing the brackish Dewey Lake which is below the Quaternary and above the Rustler.

According to State Engineer records (Exhibit G), 2 water wells are within 2 miles. Closest of the 2 wells is 1.84 miles northwest. Deepest of the 2 wells is 325'. Commingled flow from the wells was sampled on October 22, 2019. No underground source of drinking water is below the proposed disposal interval.

Formation tops are:

Quaternary = 0' Rustler anhydrite = 1514' Salado = 1895' Castile = 2260' Lamar = 3951' Bell Canyon = 3982' Cherry Canyon = 5094' Brushy Canyon = 6324' Bone Spring = 7912' Wolfcamp = 11170' Strawn = 13914' Atoka = 14032' Morrow = 14977'Barnett = 16117' Mississippian limestone = 16440' Woodford shale = 16781' Devonian carbonate = 16917' disposal interval = 16927' - 17871' TD = 17871'(Montoya = 17881')

Two water wells are within a 2-mile radius according to State Engineer records (Exhibit G) and were sampled on October 22, 2019. There will be >2.9 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.

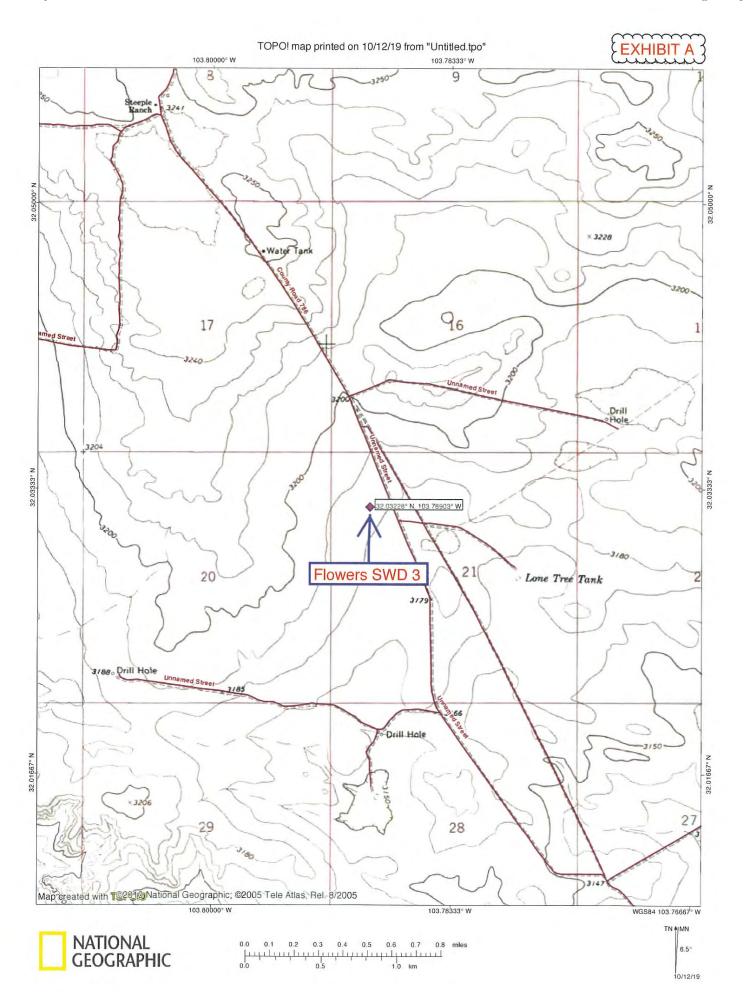
- IX. The well will be stimulated with acid.
- X. GR log will be run from the third intermediate to TD.



PAGE 5

- XI. Two water wells within 2 miles were found and sampled during an October 22, 2019 field inspection.
- XII. Longwood Water Management Company, LLC (Exhibit H) 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 156 active Devonian SWD wells and 9 active Devonian water injection wells in New Mexico.
- XIII. A legal ad (see Exhibit I) was published on October 31, 2019. Notice (this application) has been sent (Exhibit J) to the surface owner (BLM) and all operators, lessees, and unleased mineral interest owners within a mile who are required to receive notice.





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 District III 1000 Rio Brazos Road, Aztec, NM 87410 Phone: (505) 334-6178 Fax: (505) 334-6170 District IV 1220 S St. Francis Dr., Santa Fe, NM 87505 Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources
Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

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

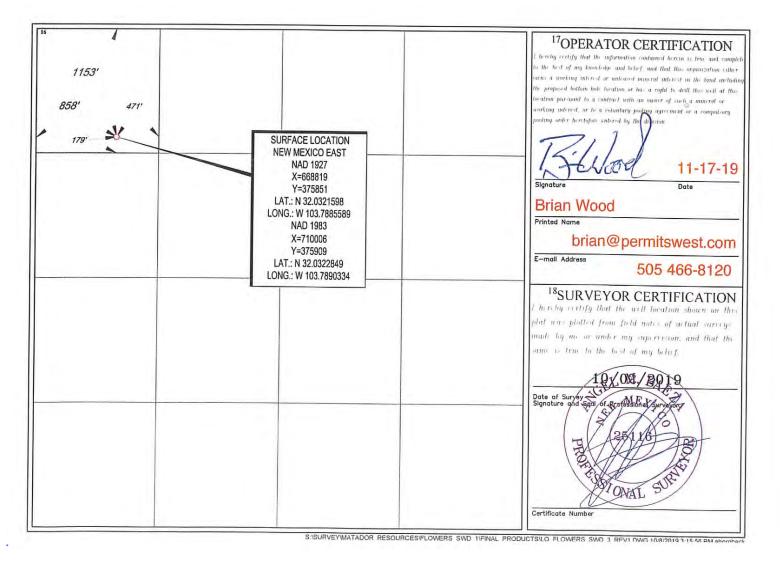
| AMENDED REPORT |
|----------------|
| EXHIBIT A |

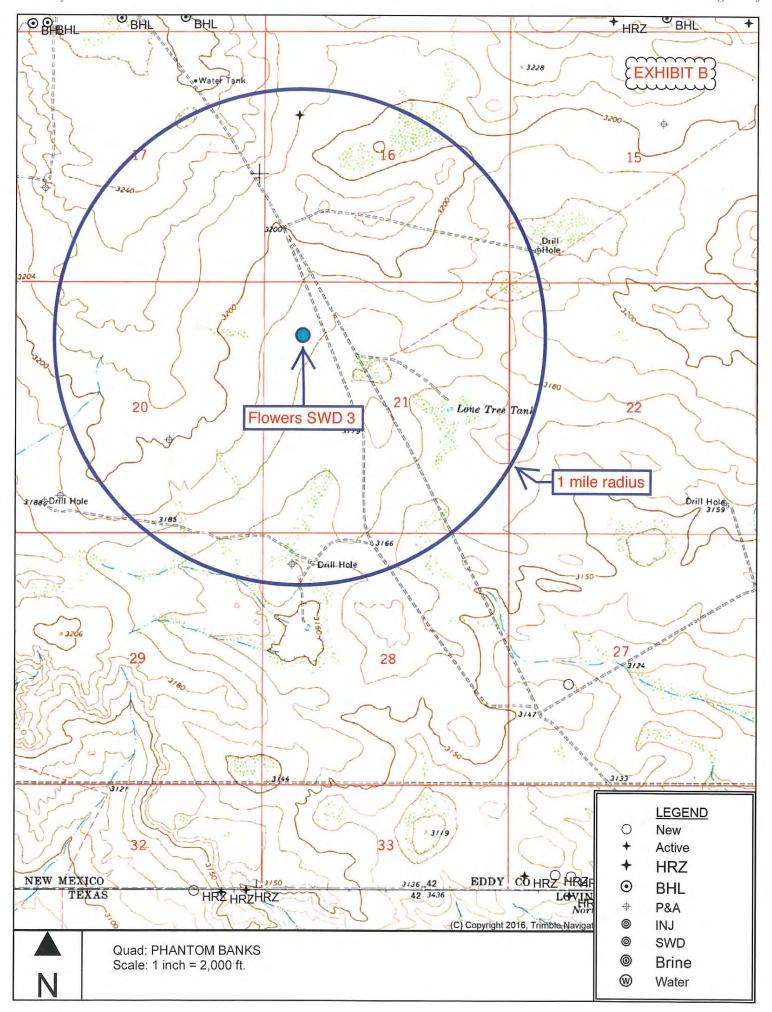
| | DEDICATION PLAT | u | |
|------------------------------|---|-------------------------------|--|
| 30-015- | ² Pool Code 96101 | SWD; Devonian | |
| ⁴ Property Code | ⁵ Property Name FLOWERS SWD | ⁶ Well Number | |
| ⁷ OGRID №. 328484 | *Operator Name LONGWOOD WATER MANAGEMENT | COMPANY, LLC "Elevation 3186" | |

WELL LOCATION AND ACREAGE DEDICATION DE

¹⁰Surface Location UL or lot no. Section Township Range Lot Idn Feet from the Feet from the North/South line East/West line D 21 26 - S31-E 1153' NORTH 858 WEST EDDY 11 Bottom Hole Location If Different From Surface UL or lot no. Section Township Range Lot Idn Feet from the North/South line Feet from the East/West line County 12 Dedicated Acres Joint or Infill Consolidation Code Order No.

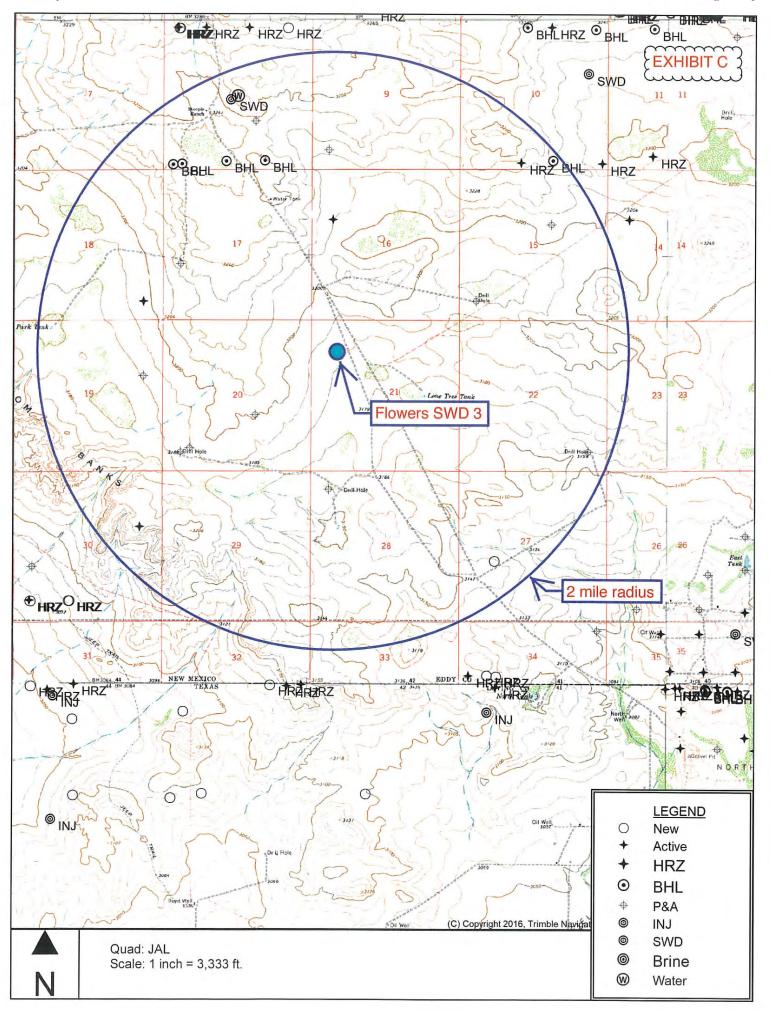
No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

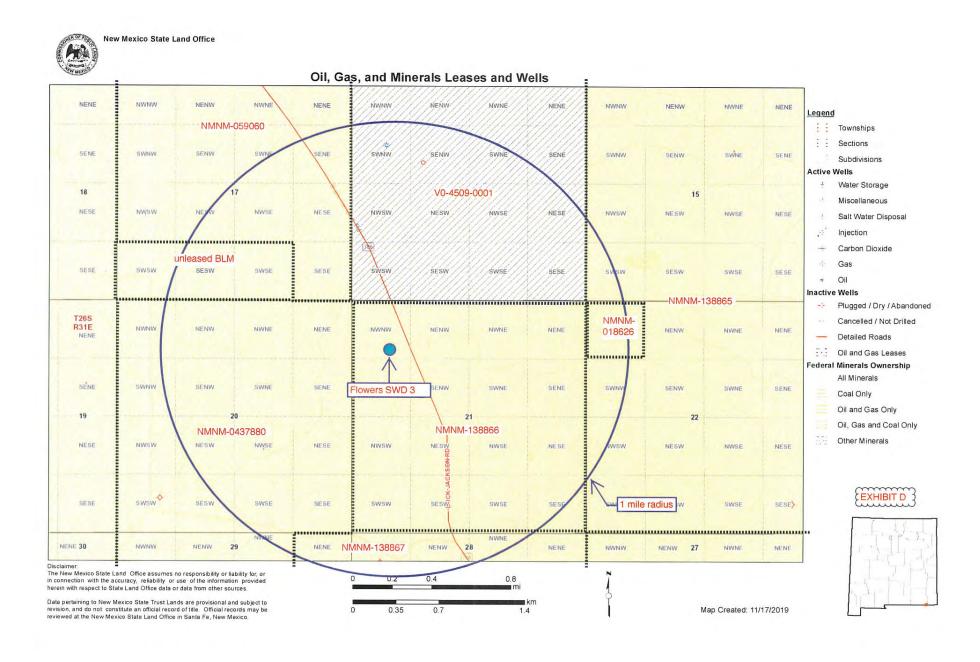




SORTED BY DISTANCE FROM FLOWERS SWD 3

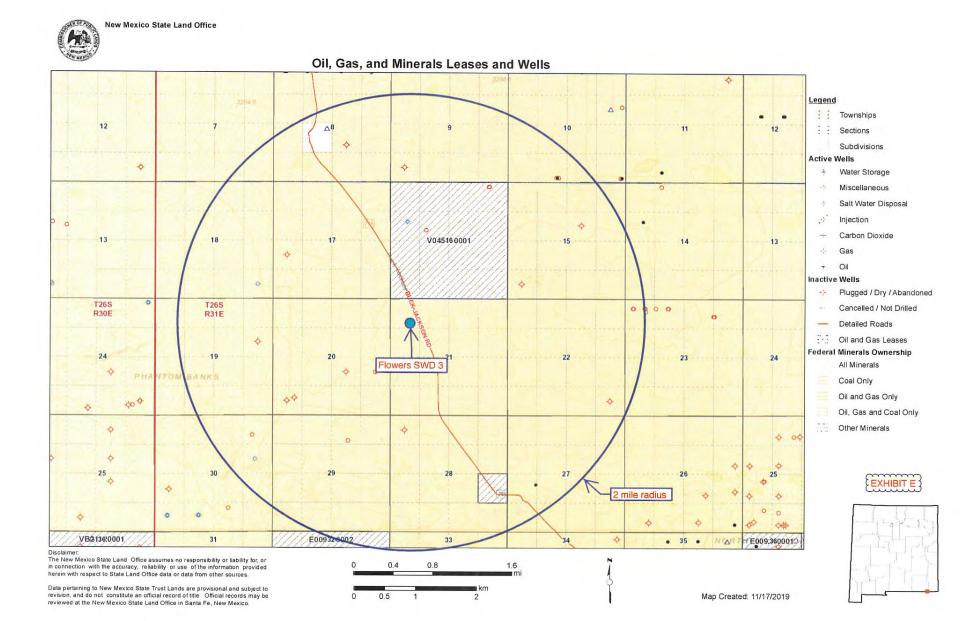
| API | OPERATOR | WELL | STATUS | UNIT- SECTION- T26S-R31E | TVD | ZONE @ TD | FLOWERS SWD 3 | |
|----------------------------|------------------|----------------------------------|--------|--------------------------------|-------|-----------|------------------|--|
| 3001531131 | EOG | Phantom Draw Federal Unit 003 | P&A | J-20 | 13500 | Penn | | |
| 3001530485 EOG Mer | | Merphan 16 State 001 | G | E-16 | 12643 | Wolfcamp | 4692 | |
| 3001505888 Finley & Cherry | | Buchly | P&A | D-28 | 4080 | Delaware | 4791 | |
| 3001505862 | Buckles Mosie | Federal 1-15 | P&A | M-15 | 4155 | Delaware | 5413 | |





FLOWERS SWD 3 AREA OF REVIEW LEASES

| Aliquot Parts in Area of Review (T. 26 S., R. 31 E.) | Lessor | Lease | Lessee(s) of Record | Operators (all shallower than Devonian) |
|---|--------|--------------|---------------------|---|
| W2SW4 Sec. 15 | BLM | NMNM-138865 | MRC Permian | N/A |
| W2, S2NE4, & SE4 Sec. 16 | NMSLO | V0-4509-0001 | EOG | EOG |
| E2E2, SENW, SWNE, NWSE, & NESW Sec. 17 | BLM | NMNM-059060 | EOG | N/A |
| S2SW4 & SWSE Sec. 17 | BLM | unleased | N/A | N/A |
| N2, N2S2, SESW, & S2SE4 Sec. 20 | BLM | NMNM-0437880 | EOG | N/A |
| all Sec. 21 | BLM | NMNM-138866 | MRC Permian | N/A |
| NWNW Sec. 22 | BLM | NMNM-018626 | Occidental Permian | N/A |
| SWNW & W2SW4 Sec. 22 | BLM | NMNM-138865 | MRC Permian | N/A |
| N2N2 Sec. 28 | BLM | NMNM-138867 | MRC Permian | N/A |
| NENE Sec. 29 | BLM | NMNM-138867 | MRC Permian | N/A |
| NWNE Sec. 29 | BLM | NMNM-0437880 | EOG | N/A |



PRODUCED WATER SAMPLES FROM T. 26 S., R. 31 E. (in mg/l)

| API | Section | UL | Formation | TDS | Sodium | Calcium | Iron | Magnesium | Chloride | Sulfate |
|------------|---------|----|-------------------------|--------|--------|---------|------|-----------|----------|---------|
| 3001539036 | 2 | М | AVALON UPPER | 223019 | 76002 | 10438 | 210 | 1922 | 131072 | 632 |
| 3001539104 | 2 | N | AVALON UPPER | 162560 | 57137 | 3886 | 42 | 776 | 97161 | 756 |
| 3001539162 | 2 | 0 | AVALON UPPER | 179789 | 71576 | 617 | 22 | 110 | 101374 | 0 |
| 3001539162 | 2 | 0 | AVALON UPPER | 179938 | 71576 | 617 | 22 | 110 | 101374 | 844 |
| 3001537899 | 10 | В | AVALON UPPER | 199639 | 68948 | 7560 | 111 | 1523 | 118195 | 0 |
| 3001537899 | 10 | В | AVALON UPPER | 209352 | 70090 | 7327 | 203 | 1557 | 127230 | 600 |
| 3001538193 | 11 | N | AVALON UPPER | 225190 | 77011 | 8744 | 636 | 1649 | 134075 | 0 |
| 3001538193 | 11 | N | AVALON UPPER | 196577 | 68797 | 5059 | 12 | 1066 | 118943 | 872 |
| 3001538193 | 11 | N | AVALON UPPER | 203079 | 72261 | 4407 | 112 | 904 | 122172 | 658 |
| 3001539866 | 10 | N | BONE SPRING 2ND SAND | 152439 | 48496 | 6731 | 29 | 801 | 94055 | 0 |
| 3001540994 | 10 | Р | BONE SPRING 2ND SAND | 138162 | 44459 | 6281 | 30 | 781 | 84470 | 0 |
| 3001540994 | 10 | Р | BONE SPRING 2ND SAND | 138376 | 44459 | 6281 | 30 | 781 | 84470 | 618 |
| 3001542113 | 2 | N | BONE SPRING 3RD SAND | 94966 | 31353 | 3679 | 32 | 484 | 57490 | 0 |
| 3001542113 | 2 | N | BONE SPRING 3RD SAND | 94518 | 30032 | 3403 | 20 | 439 | 58782 | 355 |
| 3001542113 | 2 | N | BONE SPRING 3RD SAND | 94864 | 30225 | 3424 | 15 | 444 | 59015 | 365 |

PRODUCED WATER SAMPLES FROM T. 26 S., R. 31 E. (in mg/l)

| API | Section | UL | Formation | TDS | Sodium | Calcium | Iron | Magnesium | Chloride | Sulfate |
|------------|---------|----|-------------------------|--------|--------|---------|------|-----------|----------|---------|
| 3001542113 | 2 | N | BONE SPRING 3RD SAND | 91289 | 28721 | 3441 | 16 | 437 | 56957 | 328 |
| 3001505886 | 26 | 0 | DELAWARE | 212112 | | | | | 132100 | 425 |
| 3001542688 | 2 | Р | WOLFCAMP | 81366 | 26319 | 2687 | 26 | 327 | 50281 | 400 |



New Mexico Office of the State Engineer {



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

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Sub-

closed)

| | | Sub- | | - | Q | - | | | | | | | | No service of the service of | Vater |
|----------------|------|-------|--------|----|----|---|-----|-----|-----|--------|----------|-------------|------------|------------------------------|-------|
| POD Number | Code | basin | County | 64 | 16 | 4 | Sec | Tws | Rng | X | Y | DistanceDep | othWellDep | thWater Co | lumn |
| <u>C 01777</u> | | C | ED | | | | 08 | 26S | 31E | 613245 | 3547409* | 2965 | 325 | 300 | 25 |
| <u>C 02248</u> | | CUB | ED | 1 | 2 | 3 | 08 | 26S | 31E | 612942 | 3547316* | 3008 | 300 | 292 | 8 |
| <u>C 02249</u> | | CUB | ED | 1 | 2 | 3 | 08 | 26S | 31E | 612942 | 3547316* | 3008 | 300 | 292 | 8 |

Average Depth to Water:

294 feet

Minimum Depth:

292 feet

Maximum Depth:

300 feet

Record Count: 3

UTMNAD83 Radius Search (in meters):

Easting (X): 614346

Northing (Y): 3544655

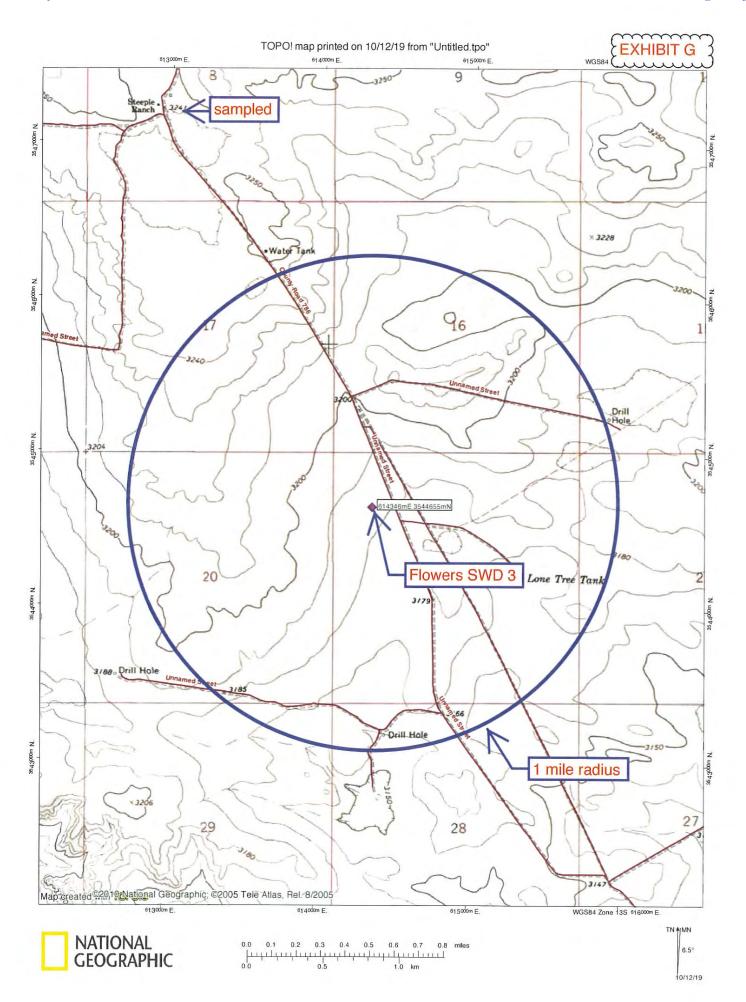
Radius: 3220

*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.

10/12/19 2:03 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER



Analytical R

Lab Order 1910C90

Date Reported: 10/31/2019

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Permits West

Client Sample ID: Trough WM 1 Flowers SWD 3

Project: Longwood Flowers SWD 3

Collection Date: 10/22/2019 11:50:00 AM

Lab ID: 1910C90-001

Received Date: 10/23/2019 3:28:00 PM

| Analyses | Result | RL Q | ual Units | DF | Date Analyzed | Batch |
|-------------------------------------|--------|------|-----------|----|-----------------------|--------|
| EPA METHOD 1664B | | | | | Analyst: | KMN |
| N-Hexane Extractable Material | ND | 9.26 | mg/L | 1 | 10/30/2019 9:47:00 AM | 48413 |
| EPA METHOD 300.0: ANIONS | | | | | Analyst: | CAS |
| Chloride | 19 | 0.50 | mg/L | 1 | 10/23/2019 6:08:35 PM | R63920 |
| SM2540C MOD: TOTAL DISSOLVED SOLIDS | | | | | Analyst: | KS |
| Total Dissolved Solids | 340 | 20.0 | mg/L | 1 | 10/28/2019 5:39:00 PM | 48386 |

Matrix: AQUEOUS

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
- Н 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 1 of 4

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1910C90

31-Oct-19

Client:

Permits West

Project:

Longwood Flowers SWD 3

Sample ID: MB-48413

SampType: MBLK

TestCode: EPA Method 1664B

Client ID: PBW

Batch ID: 48413

RunNo: 64068

Prep Date: 10/28/2019

Analysis Date: 10/30/2019

PQL

SeqNo: 2192136

Units: mg/L HighLimit

RPDLimit

Qual

N-Hexane Extractable Material Sample ID: LCS-48413

Client ID: LCSW

SampType: LCS

Result

TestCode: EPA Method 1664B

Batch ID: 48413 Analysis Date: 10/30/2019 RunNo: 64068

SeqNo: 2192137

Units: mg/L

Analyte

Prep Date: 10/28/2019

PQL SPK value SPK Ref Val %REC LowLimit

40.00

98.0

%RPD

%RPD

Qual

N-Hexane Extractable Material

SPK value SPK Ref Val %REC LowLimit

HighLimit

RPDLimit

10.0

78

114

39.2

Qualifiers:

Value exceeds Maximum Contaminant Level

D Sample Diluted Due to Matrix

Holding times for preparation or analysis exceeded H

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit % Recovery outside of range due to dilution or matrix Analyte detected in the associated Method Blank

E Value above quantitation range

Analyte detected below quantitation limits

Sample pH Not In Range

RL Reporting Limit Page 2 of 4

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1910C90

31-Oct-19

Client:

Permits West

Project:

Longwood Flowers SWD 3

Sample ID: MB

SampType: mblk

TestCode: EPA Method 300.0: Anions

Client ID: PBW

Batch ID: R63920

RunNo: 63920 SeqNo: 2185716

Units: mg/L

Prep Date: Analyte

Analysis Date: 10/23/2019 Result PQL

SPK value SPK Ref Val %REC LowLimit

HighLimit

TestCode: EPA Method 300.0: Anions

LowLimit

%RPD

RPDLimit

Chloride

0.50

Sample ID: LCS

SampType: Ics

Client ID: LCSW

Batch ID: R63920

RunNo: 63920

Units: mg/L

Prep Date:

Analysis Date: 10/23/2019

SeqNo: 2185717

%RPD

Analyte

PQL

Chloride

90

4.7 0.50 5.000

SPK value SPK Ref Val

%REC 94.9

HighLimit 110

RPDLimit Qual

Qualifiers:

Value exceeds Maximum Contaminant Level

Sample Diluted Due to Matrix D

Holding times for preparation or analysis exceeded H

ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

B 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

Hall Environmental Analysis Laboratory, Inc.



31-Oct-19

Client:

Permits West

Project:

Longwood Flowers SWD 3

Sample ID: MB-48386

SampType: MBLK

TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: PBW

Batch ID: 48386

Result

RunNo: 64021

Prep Date: 10/25/2019

Analyte

Analysis Date: 10/28/2019 PQL

SeqNo: 2190105 Units: mg/L

RPDLimit

Qual

Total Dissolved Solids

ND 20.0

Sample ID: LCS-48386

SampType: LCS

SPK value SPK Ref Val %REC LowLimit

%RPD

Client ID: LCSW

RunNo: 64021

TestCode: SM2540C MOD: Total Dissolved Solids

Prep Date: 10/25/2019

Batch ID: 48386

Analysis Date: 10/28/2019

SeqNo: 2190106

Units: mg/L

HighLimit

RPDLimit

Analyte

Result PQL

SPK value SPK Ref Val %REC LowLimit

101

Total Dissolved Solids

1010

1000

HighLimit 120

Qual

20.0

%RPD

Qualifiers:

- Value exceeds Maximum Contaminant Level
- D Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded
- 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 4 of 4



Longwood Water Management Company, LLC

One Lincoln Centre • 5400 LBJ Freeway • Suite 1500 • Dallas, Texas 75240 Voice 972.371.5200 • Fax 972.371.5201 jharrington@matadorresources.com

Jake Harrington Senior Geologist

October 10, 2019

NM Oil Conservation Division 1220 S. St. Francis Dr. Santa Fe, NM 87505

> Re: Geology Statement Flowers SWD #3 Section 21, T. 26S, R. 31E Eddy County, New Mexico

To whom it may concern:

Available geologic and engineering data related to the proposed Well have been thoroughly reviewed, and no evidence for a hydrological connection between the proposed deep Devonian injection zone, located at approximately 16,917 ft., and any underground sources of drinking water has been found.

Sincerely, Longwood Water Management Company, LLC

Jake Harrington

Carlsbad Current Argus.



Affidavit of Publication Ad # 0003874372

F. / 37 VERANO LOOP

SANTA FE, NM 87508

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:

October 31, 2019

Longwood Water Management Company, LLC is applying to drill the Flowers SWD 3 as a saltwater disposal well. The well is staked at 1153' FNL & 858' FWL Sec 21, T. 26 S., R. 31 E., Eddy County, NM. This is 21 miles southeast of Loving, NM and 16 miles northeast of Orla, TX. Disposal will be in the Devonian from 16,927' to 17,871'. Maximum injection pressure will be 3,385 psi. Maximum disposal rate will be 60,000 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 87505 466-8120.

October 31, 2019

Legal Clerk

Subscribed and sworn before me this October 31.

2019:

State of WI, County of Brown

NOTARY PUBLIC

My commission expires

Ad # 0003874372 PO #: Longwood Water Management # of Affidavits : 1







November 23, 2019

BLM 620 E. Greene Carlsbad NM 88220

Longwood Water Management Company, LLC is applying (see attached application) to drill the Flowers SWD 3 well as a saltwater disposal well. As required by NM Oil Conservation Division (NMOCD) rules, I am notifying you of the following proposed saltwater disposal well. This letter is a notice only. No action is needed unless you have questions or objections.

<u>Well Name:</u> Flowers SWD 3 (BLM surface & lease) $\underline{TD} = 17,871'$

Proposed Disposal Zone: Devonian (from 16,927' to 17,871')

Location: 1153' FNL & 858' FWL Sec. 21, T. 26 S., R. 31 E., Eddy County, NM

Approximate Location: 21 miles southeast of Loving, NM

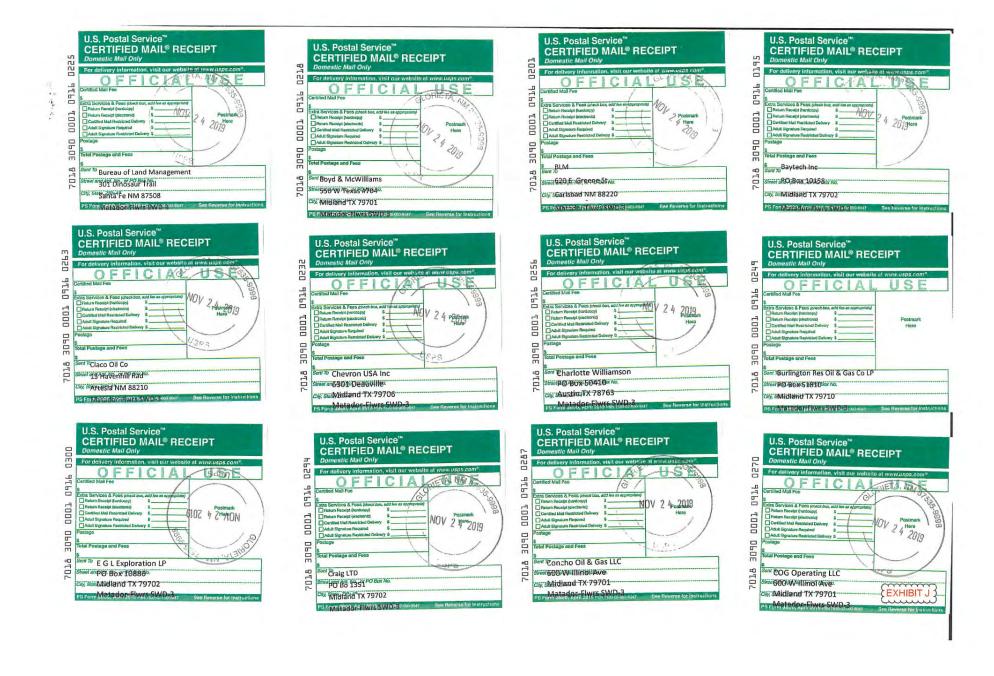
<u>Applicant:</u> Longwood Water Management Company, LLC (972) 371-5420 <u>Applicant's Address:</u> 5400 LBJ Freeway, Suite 1500, Dallas TX 75240

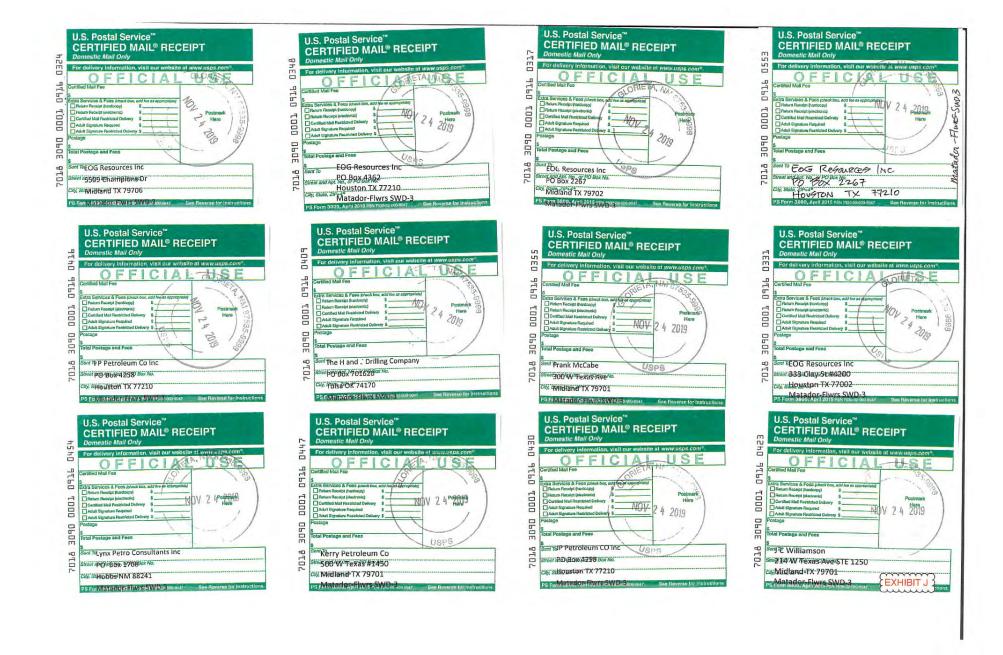
<u>Submittal Information:</u> Application for a saltwater disposal well will be filed with the NMOCD. If you have an objection, or wish to request a hearing, then it must be filed with the NMOCD within 15 days of receipt of this letter. NMOCD address is 1220 South St. Francis Dr. Santa Fe, NM 87505. Phone is (505) 476-3440.

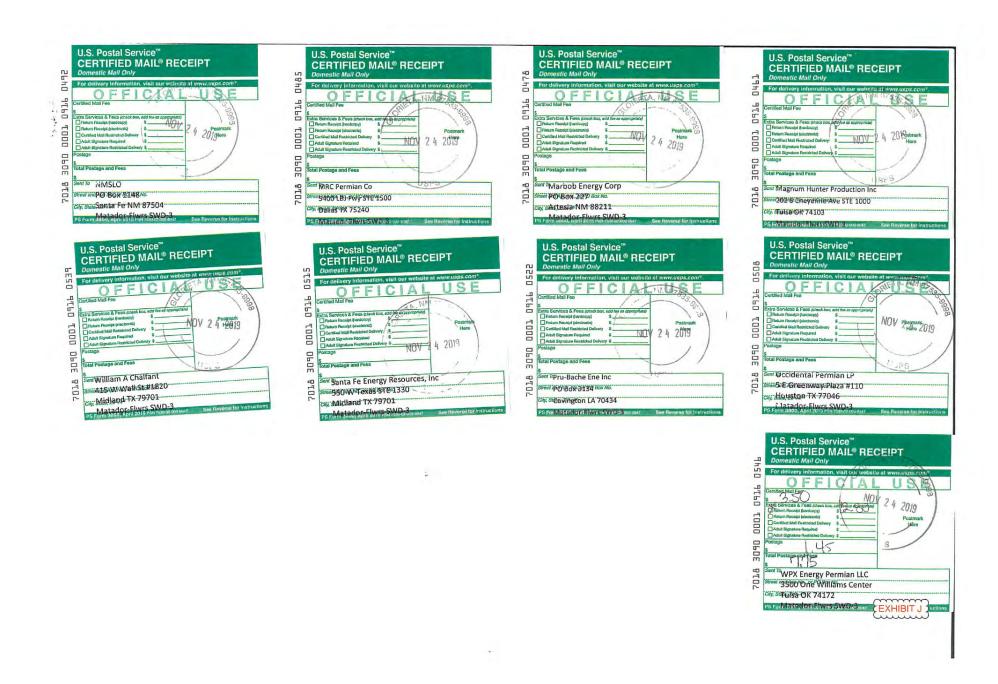
Please call me if you have any questions.

Sincerely,

Brian Wood







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December 4, 2019 In Transit to Next Facility

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December 4, 2019

In Transit to Next Facility

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December 4, 2019, 11:44 am

Available for Pickup GOLDSMITH, TX 79741

December 3, 2019, 7:41 pm

Arrived at USPS Regional Destination Facility MIDLAND TX DISTRIBUTION CENTER

December 2, 2019, 8:58 pm
Departed USPS Regional Facility
OKLAHOMA CITY OK DISTRIBUTION CENTER



December 2, 2019, 1:43 pm Arrived at USPS Regional Facility OKLAHOMA CITY OK DISTRIBUTION CENTER

November 30, 2019, 10:26 am Forwarded MIDLAND, TX

November 29, 2019, 4:23 pm Forwarded MIDLAND, TX

November 29, 2019, 2:23 pm Arrived at Unit MIDLAND, TX 79705

November 29, 2019, 2:19 pm Available for Pickup MIDLAND, TX 79710

November 28, 2019, 6:10 am
Departed USPS Regional Facility
MIDLAND TX DISTRIBUTION CENTER

November 27, 2019, 8:05 pm Arrived at USPS Regional Facility MIDLAND TX DISTRIBUTION CENTER

November 25, 2019, 10:18 pm Departed USPS Facility ALBUQUERQUE, NM 87101

November 25, 2019, 10:02 pm Arrived at USPS Origin Facility ALBUQUERQUE, NM 87101

November 25, 2019, 4:18 pm Departed Post Office GLORIETA, NM 87535 Leennac