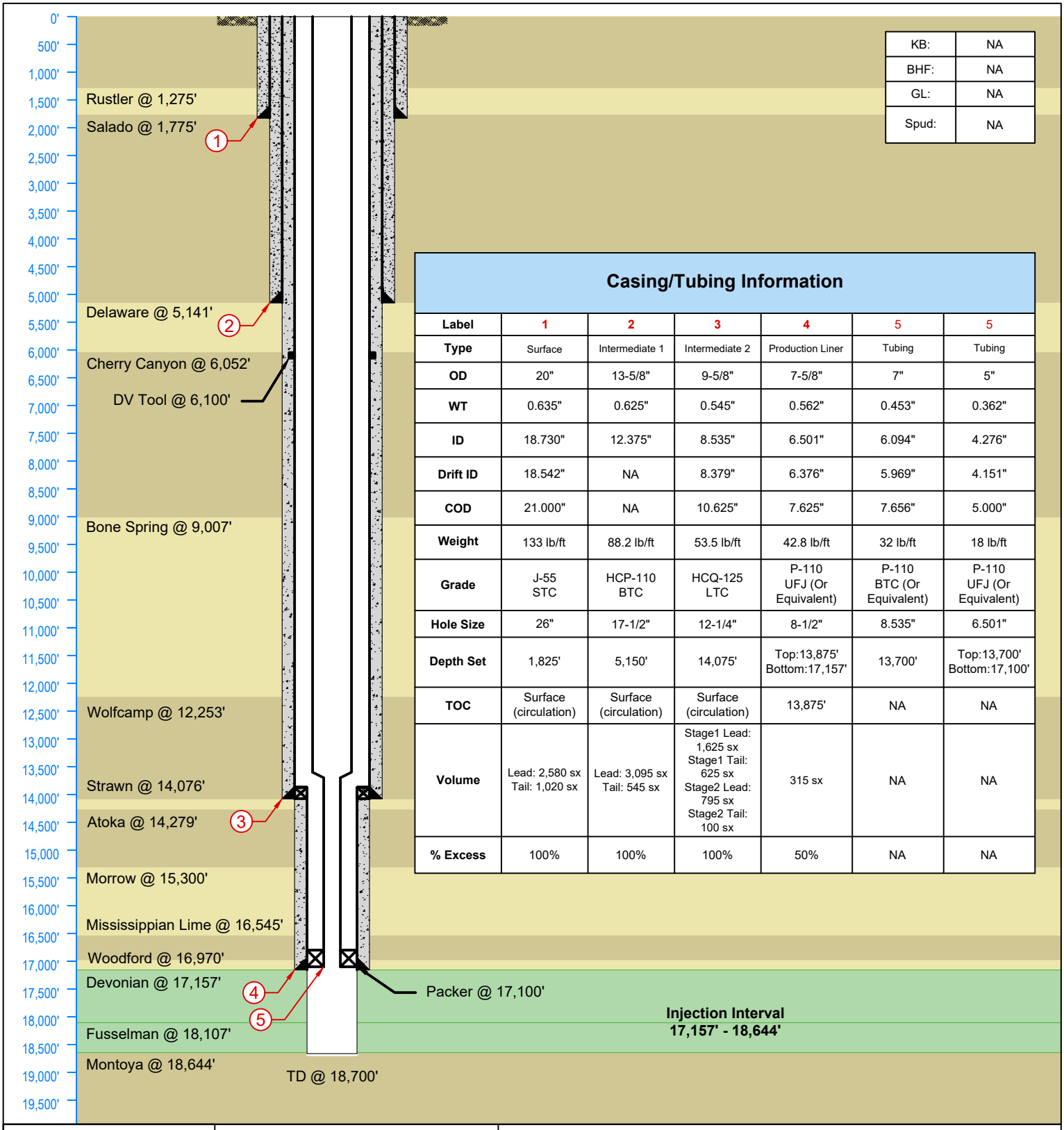

KB:	NA
BHF:	NA
GL:	NA
Spud:	NA

Casing/Tubing Information

Label	1	2	3	4	5	5
Type	Surface	Intermediate 1	Intermediate 2	Production Liner	Tubing	Tubing
OD	20"	13-5/8"	9-5/8"	7-5/8"	7"	5"
WT	0.635"	0.625"	0.545"	0.562"	0.453"	0.362"
ID	18.730"	12.375"	8.535"	6.501"	6.094"	4.276"
Drift ID	18.542"	NA	8.379"	6.376"	5.969"	4.151"
COD	21.000"	NA	10.625"	7.625"	7.656"	5.000"
Weight	133 lb/ft	88.2 lb/ft	53.5 lb/ft	42.8 lb/ft	32 lb/ft	18 lb/ft
Grade	J-55 STC	HCP-110 BTC	HCQ-125 LTC	P-110 UFJ (Or Equivalent)	P-110 BTC (Or Equivalent)	P-110 UFJ (Or Equivalent)
Hole Size	26"	17-1/2"	12-1/4"	8-1/2"	8.535"	6.501"
Depth Set	1,825'	5,150'	14,075'	Top:13,875' Bottom:17,157'	13,700'	Top:13,700' Bottom:17,100'
TOC	Surface (circulation)	Surface (circulation)	Surface (circulation)	13,875'	NA	NA
Volume	Lead: 2,580 sx Tail: 1,020 sx	Lead: 3,095 sx Tail: 545 sx	Stage1 Lead: 1,625 sx Stage1 Tail: 625 sx Stage2 Lead: 795 sx Stage2 Tail: 100 sx	315 sx	NA	NA
% Excess	100%	100%	100%	50%	NA	NA

LONQUIST & CO. LLC
PETROLEUM ENGINEERS | ENERGY ADVISORS
HOUSTON | CALGARY
AUSTIN | WICHITA | DENVER

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Austin, Texas 78738
Tel: 512.732.9812
Fax: 512.732.9816

Oilfield Water Logistics

Czervik SWD No. 1

Country: USA	**State/Province:** New Mexico	**County/Parish:** Eddy
Location:	**Site:**	**Survey:**
API No: NA	**Field:**	**Well Type/Status:** SWD / New Drill
RRC District No:	**Project No:** 1792	**Date:** 4/30/2020
Drawn: WHG	**Reviewed:** RH	**Approved:** SLP
Rev No: 1	**Notes:**	

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 ___X___Disposal _____Storage
Application qualifies for administrative approval? ___X___Yes _____No

II. OPERATOR: OWL SWD Operating, LLC
ADDRESS: 8214 Westchester Drive, Suite 850, Dallas, TX 75255
CONTACT PARTY: Preston Carr PHONE: (855) 695-7937

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 ___X___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.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
5. 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: Ramona Hovey TITLE: Consulting Engineer – Agent for OWL SWD Operating, LLC

SIGNATURE: _____DATE: 4/30/2018

E-MAIL ADDRESS: ramona@lonquist.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

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.

INJECTION WELL DATA SHEET

OPERATOR: OWL SWD Operating, LLC (OGRID 308339)

WELL NAME & NUMBER: Czervik SWD No. 1

WELL LOCATION:	2,301' FNL & 2,426' FWL	F	29	23 S	33 E
	FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 26" Casing Size: 20"

Cemented with: 3,600 sks ***or*** _____ ft^3

Top of Cement: surface Method Determined: circulation

Intermediate Casing 1

Hole Size: 17-1/2" Casing Size: 13-5/8"

Cemented with: 3,640 sks ***or*** _____ ft^3

Top of Cement: surface Method Determined: circulation

Intermediate Casing 2

Hole Size: 12-1/4" Casing Size: 9-5/8"

Cemented with: 3,145 sks ***or*** _____ ft^3

Top of Cement: surface Method Determined: circulation

Production Liner

Hole Size: 8-1/2”

Casing Size: 7-5/8”

Cemented with: 315 sks

or _____ ft^3

Top of Cement: 13,875’

Method Determined: Calculation

Total Depth: 18,700’

Injection Interval

17,157 feet to 18,644 feet

(Open Hole)

INJECTION WELL DATA SHEET

Tubing Size: 7", 32.0 lb/ft, P-110 BTC from 0-13,700' and 5" 18 lb/ft UFJ (or equivalent), from 13,700' – 17,100'

Lining Material: Duoline

Type of Packer: 7-5/8" x 5" D&L Oil Tools Permapack Packer – Single Bore

Packer Setting Depth: 17,100'

Other Type of Tubing/Casing Seal (if applicable): _____

Additional Data

1. Is this a new well drilled for injection? ___X___Yes _____No

   If no, for what purpose was the well originally drilled?

   _____

2. Name of the Injection Formation: Silurian-Devonian

3. Name of Field or Pool (if applicable): _____

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.

   No, new drill.

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:

Formation	Depth
Delaware	5,141’
Cherry Canyon	6,052’
Bone Spring	9,007’
Wolfcamp	12,253’
Strawn	14,076’
Atoka	14,279’
Morrow	15,300’
Devonian	17,157’

OWL SWD Operating, LLC.

Czervik SWD No. 1

FORM C-108 Supplemental Information

III. Well Data

A. Wellbore Information

1.

Well information	
Lease Name	Czervik SWD
Well No.	1
Location	Unit F S-29 T-23S R-33E
Footage Location	2,301' FNL & 2,426' FWL

2.

a. Wellbore Description

Casing Information				
Type	Surface	Intermediate 1	Intermediate 2	Production Liner
OD	20"	13-5/8"	9-5/8"	7-5/8"
WT	0.635"	0.625"	0.545"	0.562"
ID	18.730"	12.375"	8.535"	6.501"
Drift ID	18.542"		8.379"	6.376"
COD	21.000"		10.625"	7.625"
Weight	133 lb/ft	88.2 lb/ft	53.5 lb/ft	42.8 lb/ft
Grade	J-55 STC	HCP-110 STC (Or Equivalent)	HCQ-125 (Or Equivalent)	P-110 UFJ (Or Equivalent)
Hole Size	26"	17-1/2"	12-1/4"	8-1/2"
Depth Set	1,825'	5,150'	14,075'	13,875' – 17,157'

b. Cementing Program

Cement Information				
Casing String	Surface	Intermediate 1	Production	Production Liner
Lead Cement	HALCEM	HALCEM	Stage 1: NEOCEM Stage 2: NEOCEM	
Lead Cement Volume	2,580 sks	3,095 sks	Stage 1: 1625 sks Stage 2: 795 sks	
Tail Cement	HALCEM	HALCEM	Stage 1: NEOCEM Stage 2: HALCEM	VERSACEM
Tail Cement Volume	1,020 sks	545 sks	Stage 1: 625 sks Stage 2: 100 sks	315 sks
Cement Excess	100%	100%	100%	50%
TOC	Surface	Surface	Surface	13,875’
Method	Circulate to Surface	Circulate to Surface	Circulate to Surface	Cement Bond Log

3. Tubing Description

Tubing		
OD	7”	5”
WT	0.453”	0.362”
ID	6.094”	4.276”
Drift ID	5.969”	4.151”
COD	7.656”	5.000”
Weight	32 lb/ft	18 lb/ft
Grade	P-110 BTC (Or Equivalent	P-110 UFJ (Or Equivalent
Depth Set	13,700’	13,700’-17,100’

Tubing will be lined with Duoline.

4. Packer Description

D&L Oil Tools 7-5/8” x 5” Permapack Packer – Single Bore

B. Completion Information

1. Injection Formation: Silurian - Devonian

2. Gross Injection Interval: 17,157’ – 18,644’

   Completion Type: Open Hole

3. Drilled for injection.

4. See the attached wellbore schematic.

5. Oil and Gas Bearing Zones within area of well:

Formation	Depth
Delaware	5,141’
Cherry Canyon	6,052’
Bone Spring	9,007’
Wolfcamp	12,253’
Strawn	14,076’
Atoka	14,279’
Morrow	15,300’
Devonian	17,157’

VI. Area of Review

No wells within the one-mile AOR penetrated the proposed injection zone.

VII. Proposed Operation Data

1. Proposed Daily Rate of Fluids to be Injection:

   Average Volume: 20,000 BPD
   Maximum Volume: 30,000 BPD

2. Closed System

3. Anticipated Injection Pressure:

   Average Injection Pressure: 2,573 PSI (surface pressure)
   Maximum Injection Pressure: 3,431 PSI (surface pressure)

4. The injection fluid is to be locally produced water. Attached are produced water sample analyses taken from the closest wells that feature samples from the Bone Springs and Delaware formations.

5. The Devonian Formation is productive of oil and gas in this area.

VIII. Geological Data

The Devonian formation is a dolomitic ramp carbonate that occurs below the Woodford shale and above the Fusselman formation. Strata found in the Devonian formation in Southeast New Mexico are two major groups, the Wristen Buildups and the Thirtyone Deepwater Chert, with the Wristen being more abundant. The Wristen Groups is composed of mixed limestone and dolomites with mudstone to grainstone and boundstone textures. Porosity in the Wristen group is a result of both primary and secondary development. Present are moldic, vugular, karstic (including collapse breccia) features that allow for higher porosities and permeabilities. The Thirtyone Formation contains two end-member reservoir facies, skeletal packstones/grainstones and spiculitic chert, with most of the porosity and permeability found in the coarsely crystalline cherty dolomite. These particular characteristics allow for this formation to be a successful Salt Water Disposal horizon.

A. Injection Zone: Devonian-Silurian Formation

Formation	**Depth**
Rustler	1,275’
Salado	1,775’
Delaware	5,141’
Cherry Canyon	6,052’
Bone Spring	9,007’
Wolfcamp	12,253’
Strawn	14,076’
Atoka	14,279’
Morrow	15,300’
Mississippian Lime	16,545’
Woodford	16,970’
Devonian	17,157’
Fusselman	18,107’
Montoya	18,644’

B. Underground Sources of Drinking Water

Water wells in the one-mile surrounding area for the proposed Czervik SWD No.1 well are at depths ranging from 550 ft to 650 ft. The Rustler may also be another USDW and will be protected through the top of the Salado Formation at 1,775’ by setting surface casing at 1,825’.

IX. Proposed Stimulation Program

No proposed stimulation program.

X. Logging and Test Data on the Well

There are no existing logs or test data on the well. During the process of drilling and completion resistivity, gamma ray, and density logs will be run.

XI. Chemical Analysis of Fresh Water Wells

There are two (2) fresh water wells within one mile of the well location, per the New Mexico Office of the State Engineer. A list of all the water wells, a map of these wells and their associated Water Right Summaries are attached. Fresh water samples will be obtained from two of the wells and analysis of these samples will be submitted as soon as possible.

XII. Affirmative Statement of Examination of Geologic and Engineering Data

Based on the available engineering and geologic data we find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.