

BW - 4

ANNUAL REPORT

2022

From: [Chavez, Carl, EMNRD](#)
To: [wayne price: jonrgandy Gandy](#)
Cc: [Goetze, Phillip, EMNRD](#)
Subject: RE: [EXTERNAL] Wasserhund Inc Inc 2022 Annual report-Addendum Action #295323
Date: Tuesday, January 9, 2024 2:28:00 PM

Wayne and Jon,

Good afternoon!

The New Mexico Oil Conservation Division (OCD) completed its review of the addendum submitted in your E-mail message of December 16, 2023.

I can see that the OCD communication appears to have confused Wasserhund, Inc. (Wasserhund). OCD's computations with assumptions are different than Wasserhund's and were derived by basic algorithmic computations based on the "Brine Well Working Group" (2009) Useful Brine Well Calculations Sheet (Sheet).

First, the "V" in the RCC Formula is the volume of salt cavern cavity or void space created from 10,143,420 bbls of brine produced (See No. 1 below) from the well at the end of 2022.

The Sheet provides the estimated volume "V" of void space in barrels of brine based on the cumulative brine produced (See No. 2 below).

The volume "V" of void space is converted to cubic feet (See No.3 below) for the RCC Formula calculation.

The height of the salt cavern "h" (See No. 4 below) in the RCC Formula is estimated at 660 feet (Ft.) based on the maximum brine well TD (Ft.) in salt minus the casing shoe depth (Ft.).

The estimated radius "r" (Ft.) of the salt cavern is 116 Ft. and the diameter is 232 Ft. (See No. 5 below).

The OCD calculated ration of D/H (See No. 6 below) is estimated to be 0.162 which is much less than the 0.5 D/H.

OCD Final Conclusions (Case 3):

567 I 162 I 32.87313

- 1. Cumulative of 10,143,420 bbls of 10 lb Brine Produced in 2022.**
- 2. Results in 1,643,234 bbls of salt cavern space (Assuming: 1 bbl brine removed equates to about 0.162 bbl of space)**
- 3. Multiple No.2 by 1 bbl = 5.61 Ft³ to convert to a "V" of 9,218,542.96 Ft³ for RCC Formula.**
- 4. h would be the TD minus the Casing Shoe Depth or 660 Ft.**
- 5. r is equal to the Sq.Rt. (3V/3.14(h)) or 116 Ft. (Diameter = 2r or 232 Ft.)**
- 6. D/H= Max. Diam. Ft./Depth to Casing Shoe in Ft.= 232 Ft./1895 Ft. or 0.162 <<0.5**

The good thing is that both of our calculations indicated the salt cavern is safe and not likely to collapse.

OCD can see from your response to OCD's request for evaluation of the above Case 3 using the Sheet that you prefer to rely on your table form calculation method with macros you developed. OCD can also see that your assumptions on cavern height "h" are 50% less than OCD estimation.

OCD recommends that the Permittee conduct sounding for depth to the base of the salt cavern when tubing is removed from the well in order obtain more accurate “h” values used in the RCC “V” calculation. If you wish to apply your table form calculation in the future, OCD requests that you display the calculations with assumptions as they are calculated by hand in a step-by-step process in order to be evaluated by the OCD. OCD will complete its review of the “2022 Annual Report” and include some conditions in our approval.

Please contact me if you wish to communicate further on the D/H estimation.

Thank you.

Carl J. Chavez • UIC Group
Engineering Bureau
EMNRD - Oil Conservation Division
Horizon Building
8801 Horizon Blvd., Suite 260 | Albuquerque, NM 87113
505.660.7923 | CarlJ.Chavez@emnrd.nm.gov
www.emnrd.nm.gov



From: wayne price <waynepriceq.com@gmail.com>
Sent: Saturday, December 16, 2023 3:01 PM
To: Chavez, Carl, EMNRD <CarlJ.Chavez@emnrd.nm.gov>; jonrgandy Gandy <JonRGandy@aol.com>
Subject: [EXTERNAL] Wasserhund Inc Inc 2022 Annual report-Addendum Action #295323

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Please find attached a clear version of the submittal.

--

Wayne Price-Price LLC
7 Sycamore Ln
Glenwood NM 88039
505-715-2809
waynepriceq.com@gmail.com

Useful Conversions

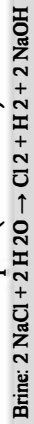
<input type="checkbox"/>	1 GB = 2.64# salt produced
<input type="checkbox"/>	1 BB = 110.88# salt produced
<input type="checkbox"/>	1 BB = 0.0554 tons salt produced
<input type="checkbox"/>	2.64 bbls space = 1 short ton salt produced
<input type="checkbox"/>	1 tons salt = 2.64 bbls space
<input type="checkbox"/>	1 GW = 2.54# salt produced
<input type="checkbox"/>	1 ton salt produced = 757.57 GB produced
<input type="checkbox"/>	1 Ton salt produced = 787.40 GW Injected
<input type="checkbox"/>	1 GB = .1336 cu ft (7.48 GB/cu f1 GB = .0056 G space created
<input type="checkbox"/>	1 BB = 0.235 B space created
<input type="checkbox"/>	1 B space = 4.29 BB = 475.87# salt produced
<input type="checkbox"/>	1 B space = 4.46 BW injected
<input type="checkbox"/>	1 GW = 2.9378# salt dissolved
<input type="checkbox"/>	1 GW = 2.54 # salt produced
<input type="checkbox"/>	1 BW = 123.387# salt dissolved
<input type="checkbox"/>	1 BW = 106.68# salt produced
<input type="checkbox"/>	1 BW = 0.162 B space
<input type="checkbox"/>	1.04 GW injected = 1.00 BB produced
<input type="checkbox"/>	1 Ton salt produced X 3.02 = B space
<input type="checkbox"/>	1 Ton salt X 2.64 = 1 B space
<input type="checkbox"/>	1 # salt produced = 0.883 G space
<input type="checkbox"/>	1 # salt produced = .0021 B space
<input type="checkbox"/>	1 B space = 6.2 BW
<input type="checkbox"/>	1 B space = 5.61 cu ft
<input type="checkbox"/>	1 cu ft salt = 0.1781 B space
<input type="checkbox"/>	1 cu ft salt = 135#

Facility ID#	OGRD	O #	Well Name	API#	ULSTR	FSL	FWL	Lat.	Long.	Lea
ICJC2116630149	118677/130851		Wasserhund, INC	30-025-26883	31-16S-35E	567	162	32.87313	103.505	Lee

ANNUAL REPORT 2022
OCD CAVERN DIAMETER CALCULATION

$$(V = \pi r^2 h / 3)$$

$$r = \text{SqRt} (3V / 3.14h)$$



Calculations:

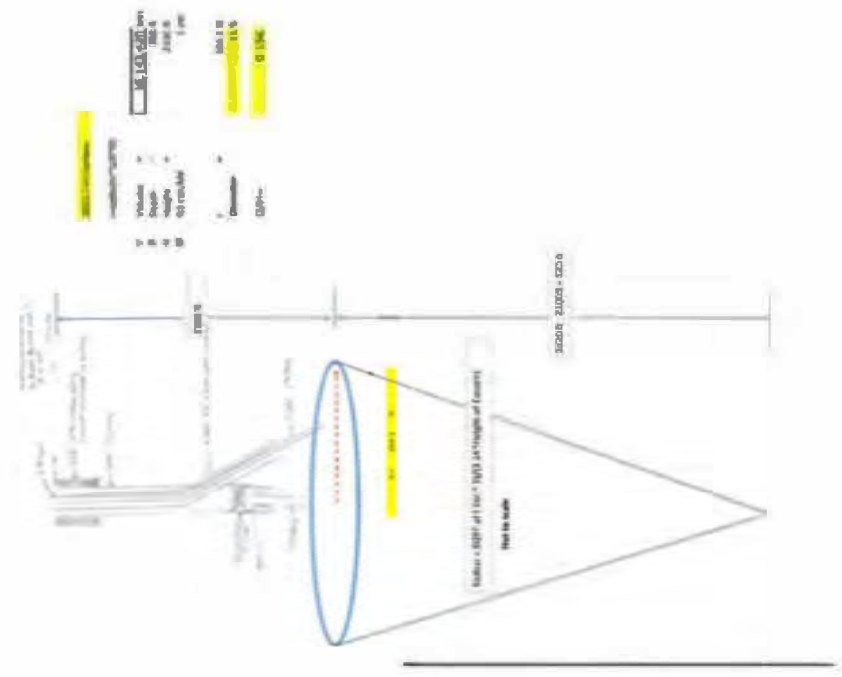
Case 1
Recent
Prod. Vol = 10,143,420 bbls = 56,951,043 Ft³
h (Cavern Height) = 360 Ft. (Wayne: 360 Ft.)
r (Radius) = 389 Ft. (Wayne: 164 Ft.)
D (Max. Cavern Diameter) = 778 Ft. (Wayne: 328 Ft.)
H (Depth to Casing Shoe) = 2,100 Ft. (Wayne: 2100 Ft.)
D/H = 0.370 (Wayne: 0.156)

Case 2
Records
Old
Prod. Vol = 10,143,420 bbls = 56,951,043 Ft³
h (Cavern Height) = 660 Ft.
r (Radius) = 287 Ft.
D (Max. Cavern Diameter) = 574 Ft.
H (Depth to Casing Shoe) = 1,895 Ft.
Tubing Depth = 2461 Ft.
TD = 2555 Ft.
D/H = 0.303

Knowns:

Worst Case: 1 bbl Prod Results in 5.615 Ft3 Removed (1:1)
Probable Case: 6:1 bbls of brine and 1 bbl of space remaining
1 BBL = 5.61458 Ft³
~ 2.5 lbs. Salt per gallon of water to produce 23.3% Brine Solution
~ 105 lbs Salt per Barrel Brine
Total Mass Salt from Cumul. Prod. Total ~ 1,065,059,100 lb. Salt Prod.
Tot. Vol = Total Mass Salt/Salt Density ~ 56,955,032 Ft3
Salt Density: 18.7 lb Salt/Ft3
1 bbl space per 6.2 bbl produced
1 bbl space per 5.61 Ft3
107 lbs Salt produced per bbl of brine

* Wayne Price 11/23/2023 Msg. stated: 1 ft3 salt per bbl 10 lb Brine Prod.



OCD CONCLUSIONS: AT LEAST 107-123 LBS (Note: Function of Salt Saturation) OF SALT/BBL BRINE OR 1 FT3 SALT IS ABOUT 135 LBS; HOWEVER, RCC FIGURES ARE INCORRECT BASED ON THE RCC FORMULA

OCD Final Conclusions (Case 3):

1. Cumulative of 10,143,420 bbls of 10 lb Brine Produced in 2022.
2. Results in 1,643,234 bbls of salt cavern space (Assuming: 1 bbl brine removed equates to about 0.162 bbl of space)
3. Multiple No.2 by 1 bbl = 5.61 Ft3 to convert to a "V" of 9,218,542.96 Ft3 for RCC Formula.
4. h would be the TD minus the Casing Shoe Depth or 660 Ft.
5. r is equal to the Sq.Rt. $(3V / 3.14(h))$ or 116 Ft. (Diameter = 2r or 232 Ft.)

Wasserhund Inc.
P.O. Box 2140
575-396-0522
FAX 575-396-0797
Lovington, New Mexico 88260

Addendum-1
December 15, 2023

ANNUAL CLASS III WELL REPORT FOR 2022

Wasserhund Inc.
Buckeye Brine Station
OCD Permit BW-04

API No. 30-025-26883 Eidson #1
Unit Letter M-Section 31-Ts 16s – R35e

Wayne Price-Price LLC Consultant for Wasserhund Inc.

W P Price

Date: December 16, 2023

Dear Carl Chavez:

Recently you expressed in an E-mail Dec 4, 2023 (attached herein) a concern on how the D/H ratio ("Diameter" of cavern roof versus the "Height" measured above the roof to the surface) was calculated in the 2022 Annual Report: Price LLC on behalf of Wasserhund Inc. brine well permit BW-04 hereby submits this Addendum-1 to address your concerns.

If we interpreted your concern correctly, you had indicated that the original casing shoe, which was set at 1895 feet BGS, should probably be a reference point in these calculations. In addition, you noted in the E-mail that the Cavern depth should probably be measured from the casing shoe depth to a Total "TD" rather than from where the production tubing is set.

Quote: "OCD is currently working with Permittees of Brine Wells in the estimation of the above subject "Right Circular Cone" (RCC) calculation [$V = \pi r^2 h / 3$] based on the salt cavern cavity volume and estimated cavern height. By obtaining the "Maximum diameter of the salt cavern, the application of the "D (Max. Cavern Diameter in Ft.)/H (Depth to Casing Shoe in Ft.- D/H)" ratio can be calculated for the certification in the annual report."

"OCD has noticed a wide variation in estimated salt cavern cavity volume estimations and values of "h" that may not be the most accurate estimation. For example, the brine well TD minus the casing shoe depths may be more accurate than subtracting the tubing depth from the casing shoe depth in the estimation of h."

"For example, the brine well TD minus the casing shoe depths may be more accurate than subtracting the tubing depth from the casing shoe depth in the estimation of h."

Please note your h is not the "H" used in the Ratio Calculation.

Attached herein is the latest well bore sketch that was superimposed on a near by well log for reference.

The "D" (Diameter of roof cavern in feet) has been calculated using an up-right cone with the formula $D = \text{Square Root of } (3 * V / \pi * \text{cavern length measured from roof to the injection depth})$. V in this formula is the estimated total amount of salt that has been removed in cubic feet.

Historically for every barrel of 10 lb. brine water volume removed equates to approximately one cubic foot of salt, which creates a void of one cubic foot, and over time creates a salt cavern.

The "V" volume used in these calculations are based on the historical total recorded and reported cumulative volume of produced brine water. The 2022 total lifetime production beginning in 1980 was 10,143,420 barrels.

Using the Constant of for every barrel produced equals approximately one cubic foot of cavern volume created; the total lifetime cavern volume is approximately 10,143,420 cubic feet.

In order to verify the measured salt removed volume versus the calculated salt volume removed, OCD has been requiring a Mass Balance Calculation Sheet. This basically verifies if the i.e. up-right cone model in calculating the volume is within a 10% tolerance of actual measured volume. Attached is the 2022 Mass Balance Sheet that verifies the accepted tolerance.

The 2022 report used a casing shoe depth of 2100 ft. (overburden) and a Cavern depth of 360 ft. The Roof diameter was calculated using the total lifetime production of 10,143,430 barrels i.e. (10,143,430 cubic ft.). This calculated a cavern roof diameter to be approximately 328 feet. Using these numbers the D/H calculation was reported at .156, well below the .50 threshold.

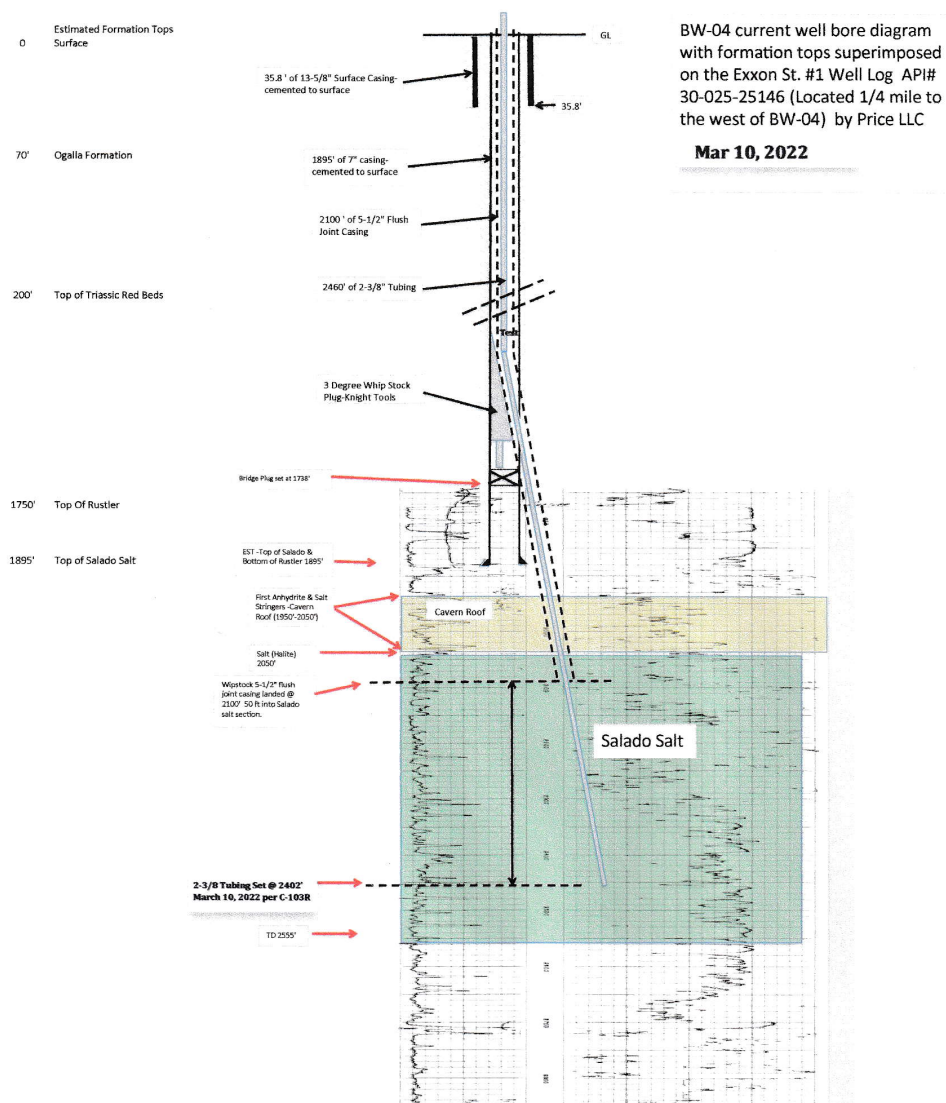
However, if we use the method you suggested with the original casing shoe depth of 1895 ft. BGS and use the cavern "h" of 660 ft. (2555' TD-1895' casing shoe); using the formula given above, the new D/H calculated number is .128.

So it appears our submitted calculation is approximately 20% more protective.

In an earlier E-mail you had sent your calculation of the D/H ratio as being approximately .38. Enclosed is a copy of your work sheet. As explained it appears you may have used the wrong constant of 5.61458 cubic ft/barrel versus the standard for every barrel of 10 lb. brine water produced it creates a cavity of approximately one cubic foot, not 5.61458 cubic ft.

Conclusion:

On behalf of Wasserhund Inc we respectfully request that OCD accept our calculations for the D/H ratio as submitted.





9 of many < >

BW-4 Eidson State #1, Wasserhund, Inc.: OCD Right Circular Cone Formula Calcs.. for V (Cavern Cavity Vol.) and h (Cavern Height) for D/H Ratio Estimation ➤



← **Chavez, Carl, EMNRD**

to me, Phillip, ▼

☰ Mon, Dec 4, 2:49 PM (12 days ago)



Wayne,

Re: OCD BW-4 Annual Report 2022 Action ID# 263318) Review

Hi.

I presented your recent Annual Report 2022 Salt Cavern Estimation to the UIC Group.

OCD is currently working with Permittees of Brine Wells in the estimation of the above subject "Right Circular Cone" (RCC) calculation [$V = \pi r^2 h / 3$] based on the salt cavern cavity volume and estimated cavern height. By obtaining the "Maximum diameter of the salt cavern, the application of the "D (Max. Cavern Diameter in Ft.)/H (Depth to Casing Shoe in Ft.- D/H)" ratio can be calculated for the certification in the annual report.

OCD has noticed a wide variation in estimated salt cavern cavity volume estimations and values of "h" that may not be the most accurate estimation. For example, the brine well TD minus the casing shoe depths may be more accurate than subtracting the tubing depth from the casing shoe depth in the estimation of h.

Please refer to the OCD's calculation of "D" based on the cumulative brine cavity volume derived from the Brine Well Working Group's "Useful Conversions" for 10 lb. Brine (See attachment). You may recall the attached conversions from the Brine Working Group in 2008 – 2009. Please refer to the attached "Ratio Calc Final" document (Case 3) for OCD's estimation of salt cavern space volume based on the conversions.

OCD thinks the "Useful Conversions" sheet may help brine well Permittees to use a standard uniform method of calculating and estimating D and V. OCD would like all brine well permittees to follow a uniform process for implementing the RCC Formula that the OCD would accept and review.

Please let OCD know your thoughts based on our approach at your earliest convenience. Meanwhile, OCD is proceeding to complete its review of the BW-4 Annual Report 2022 (Action ID# 263318).

Thank you.

Carl J. Chavez • UIC Group

Engineering Bureau

EMNRD - Oil Conservation Division

Horizon Building

8801 Horizon Blvd., Suite 260 | Albuquerque, NM 87113

505.660.7923 | CarlJ.Chavez@emnrd.nm.gov

www.emnrd.nm.gov

Released to Imaging: 1/9/2024 4:08:22 PM

X BW-4 OCD Safety Collapse Ratio CJC 11-22-2022.xlsx

Open with ▼

ANNUAL REPORT 2022
MAX. CAVERN DIAMETER CALCULATION

$$(V = \pi r^2 h / 3)$$

$$r = \sqrt[3]{3V / \pi h}$$

V (Vol)= 10,143,420 bbls= 56,951,043 Ft³

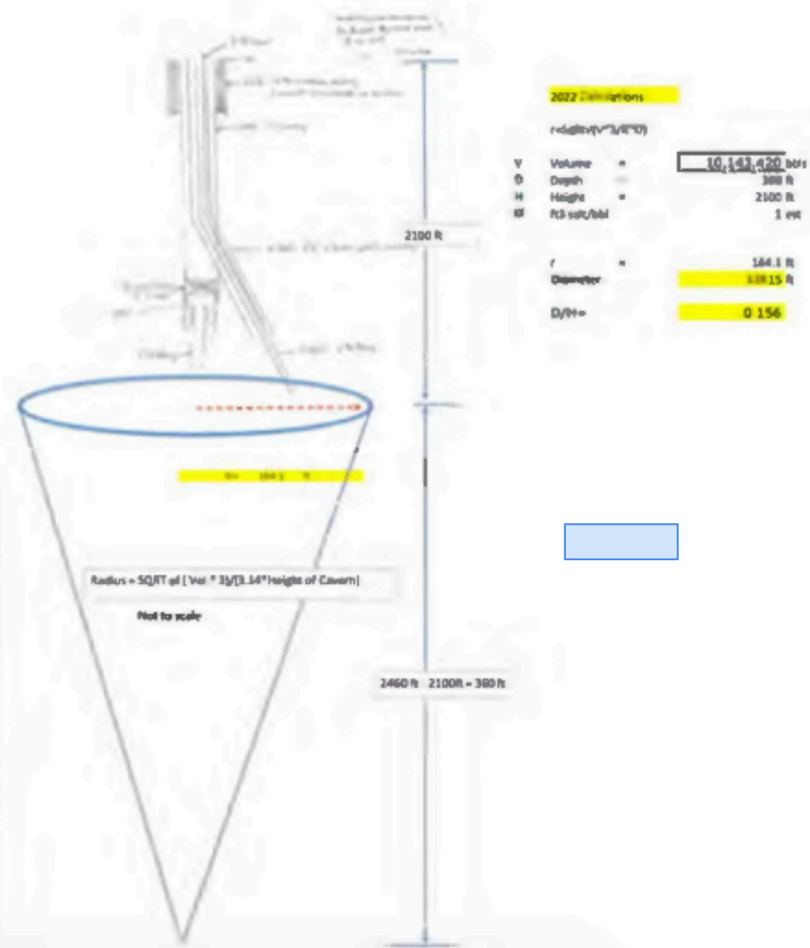
h (Cavern Height)= 360 Ft.

r (Radius)= 389 Ft.

D (Max. Cavern Diameter)= 778 Ft.

H (Depth to Casing Shoe)= 2,100 Ft.

D/H= 0.370

1 BBL= 5.61458 Ft³Ft³ Salt/bbl = ?

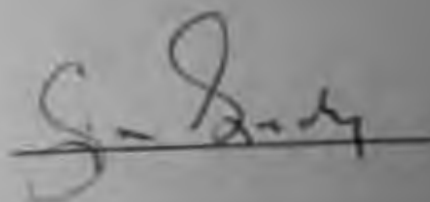
Wasserhund Inc.
P.O. Box 2140
575-396-0522
FAX 575-396-0797
Lovington, New Mexico 88260

ANNUAL CLASS III WELL REPORT FOR 2022

Wasserhund Inc.
Buckeye Brine Station
OCD Permit BW-04

API No. 30-025-26883 Eidson #1
Unit Letter M-Section 31-Ts 16s - R35e

Mr. Jon Gandy

 Date 9/12/23

Wasserhund Inc.
P.O. Box 2140
575-396-0522
FAX 575-396-0797
Lovington, New Mexico 88260

ANNUAL CLASS III WELL REPORT FOR 2022

Wasserhund Inc.
Buckeye Brine Station
OCD Permit BW-04

API No. 30-025-26883 Eidson #1
Unit Letter M-Section 31-Ts 16s – R35e

Mr. Jon Gandy _____ Date: _____

Summary of Operations: The Wasserhund brine well BW-04 continues to produce quality brine for drilling operations in the area. In early 2022 a tubing leak was discovered, as the well was not producing the normal 9.8-10 lb. brine.

A work-over was performed and the tubing in question was replaced. A casing MIT was conducted, witnessed and approved by OCD. The well was circulated during the month of April 2022, and placed back in service starting in May of 2022.

Production Volumes and Ratio. Injection production/ comparison chart of injected water to produced water attached herein. Ratio of FW/BW is within permit requirements of 90%-110% as required in permit condition 2B.2.b.

Discrepancy Notice: Permit condition 2B.2.b is the correct condition for brine wells in New Mexico and Wasserhund has generally always met these conditions.

Permit condition 3.F of the latest permit issued conflicts with permit condition 2.B.2.b and appears to be improperly written. This condition requires that the Fresh Water always be 10% more than the Brine Water production, nor greater than 20%.

This can place Wasserhund and other brine well operators in a continued non-compliance situation. We have noted this in the past and assume OCD agrees, as no compliance actions have been taken to-date.

Wasserhund once again, respectfully request OCD acknowledges and addresses this issue.

Special Note: During the 2022 year, it was suspected that the on-site dedicated brine well meters may have been off calibration, or experienced intermittent operations. Wasserhund does have a Brine production back-up sales meter and thus feel confident that brine production reported is accurate. Price LLC Consultant reviewed past fresh water usage and it appears there may have been a minor discrepancy, however the overall 2022 Fresh water and Brine production actually was statistically within tolerance with past years ratios.

Wasserhund has installed new dedicated, calibrated meters for both fresh and brine production.

Injection Pressure Data: 260-280 psig Pressure limit of 315 # is set for this well when operating in the open-hole configuration. This limit protects the formation from premature fracturing during normal operations and testing.

Chemical Analysis: Attached.

Mechanical Integrity: A casing test was conducted in March of 2022. OCD witnessed and chart included in the attachments, along with the C-103 information.

Deviations from Normal Production Methods: Normal Flow per OCD.

Leak and Spill Reports: None in 2022.

Area of Review Update Summary: No change from 2019 report, as verified by OCD well records and on-site observations.

Subsidence/Cavern Volumes/Geometric Measurements

SOLUTION CAVERN MONITORING PROGRAM: No monitors at site, received an extension due to COVID-19. Wasserhund believes monitors are not warranted at this time due to low D/H and hereby requests an exemption. It is our understanding that OCD is evaluating this request.

Solution Cavern Characterization Plan:

Since the BW-04 well never had any logs run, a well log was obtained from a nearby well and annotated to reflect the geophysical characterization of the area lithology. In addition a well bore schematic is included for reference and a mass balance was calculated for the 2022 year.

The Solution Cavern Characterization Plan is defined by using the cone method ("Worst Case") to determine the maximum cavern diameter and calculating a volume of the cavern. A mass balance calculation is performed to verify the approximate cavern volumetric size from actual measured volumes of brine produced over the life of the well.

The two are then compared to determine if the volumes are within the OCD allowed variance of 10% variance. The 2022 results are within the limit. See attachments.

The plan also includes the critical d/h calculation, which is .156 for the 2022-year report, which is well under the limit of .50.

Special Note: New permit conditions now require that the fresh water be injected down the tubing (Normal Flow) in order to prevent cavern enlargement at the top of the cavern. Currently there is no method or model developed to allow for the actual reduction in cavern enlargement at the top of the cavern. Therefore, the cavern top radius is actually less than what is calculated. This provides an additional safety factor for cavern collapse issues.

Summary of Activities: Normal operations with somewhat reduced sales.

Annual Certification: By signing the cover sheet the operator hereby certifies this condition of the permit.

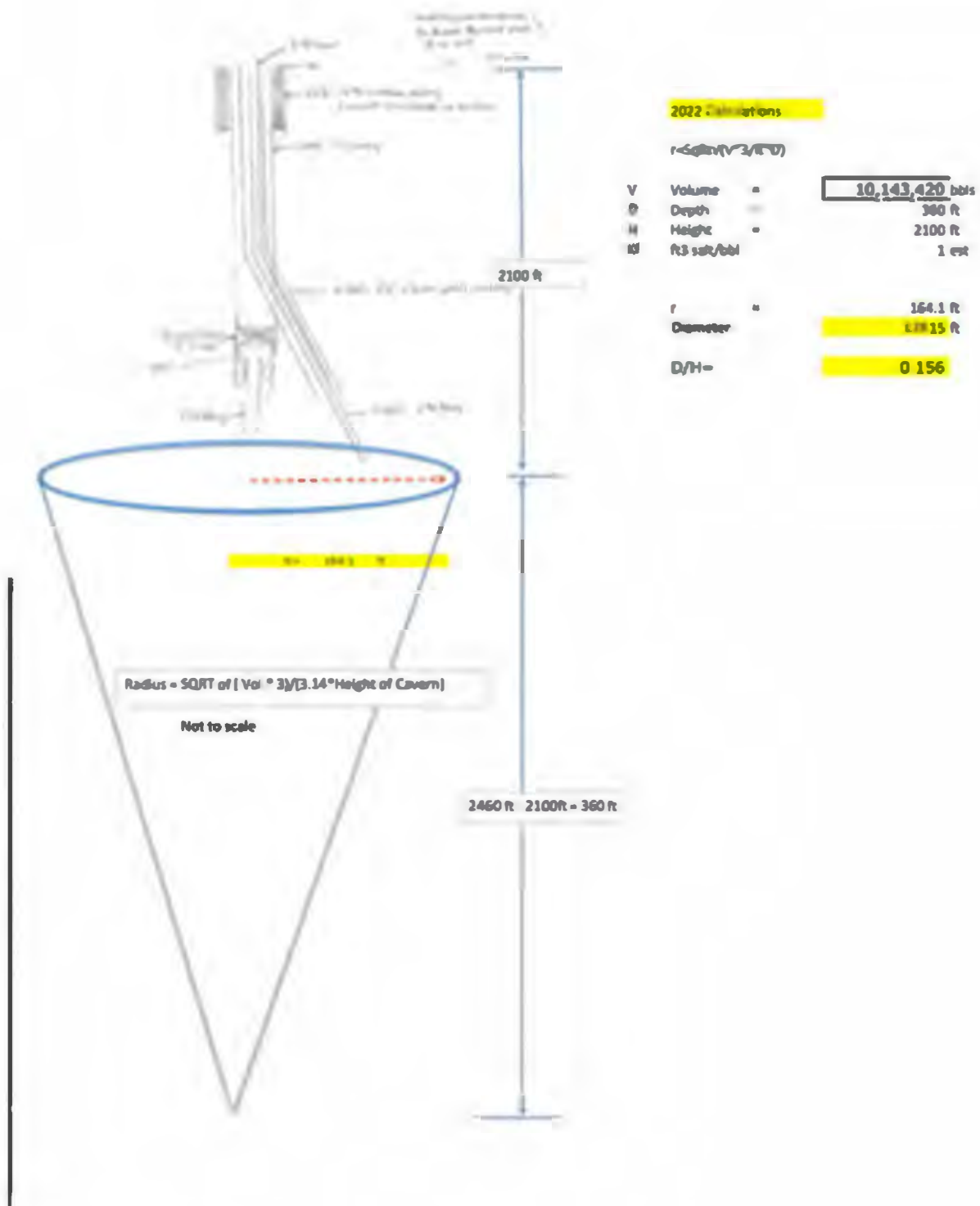
Groundwater Monitoring: Currently have a fresh water supply well in close proximity to brine well. The water from this well has been tested and no significant issues have been noted.

Annual Reporting: Filed in new OCD electronic system. OCD has informed Wasserhund that paper copies are generally not accepted any more.

2022 BW-04 Annual Report Attachments:

- + Injection/Production Comparison Chart**
- + Cavern "Worst Case" Volume and Diameter" Calculations**
- + C-103 Workover Information, MIT Test Chart, Well Bore Schematic.**
- + Mass Balance Calculation Sheet**
- + Chemical Analysis**

	Wasserhund Inc		OGRID # 8426	API# - 30-025-26883		BW-04				
		Lat	N 32.8731							
		Lon	W -103.5051							
		Legal	M-31-16s-35e							
		Footage	567 FSL	162 FWL						
	2022	Wasserhund Inc OCD BW-04 Annual Production Data & Comparison Chart								
							Permit condition 28.2.b 90%-110%			
			Fresh IN		Brine Out		Ratio FW/BW			
	Jan		11175		11173		100.02%			
	Feb		9692		9690		100.02%			
	Mar		3266		3264		100.06%			
	Apr		0		0		#DIV/0!			
	May		6663		6286		106.00%			
	Jun		12701		12097		104.99%			
	Jul		13121		13119		100.02%			
	Aug		10350		10319		100.30%			
	Sept		16142		16139		100.02%			
	Oct		9878		9865		100.13%			
	Nov		17388		17364		100.14%			
	Dec		16752		16748		100.02%			
	Total		127,128		126,064		100.84%			
	Total Fresh Water and Brine Production Carry Over from Years Past	2021	10,069,170	bbls***	10,017,356	bbls	100.52%			
	Total Life Time Production Year Ending	2022	10,196,298	bb's	10,143,420	bbls	100.52%			



Office
District I (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II (575) 748-1283
811 S. First St., Artesia, NM 88210
District III (505) 334-6178
1000 Rio Brazos Rd., Alamo, NM 87410
District IV (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM
87505

Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Revised July 18, 2013

WELL API NO. 30-025-26883

5. Indicate Type of Lease
STATE ☒ FEE ☐

6. State Oil & Gas Lease No.
25-26883

7. Lease Name or Unit Agreement Name
Eidson Brine Station, BW-004

8. Well Number 1

9. OGRID Number 130851

10. Pool name or Wildcat
Salado-Salt

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well ☐ Gas Well ☒ Other Brine Well

2. Name of Operator Wasserhund, Inc

3. Address of Operator P.O. Box 2140, Lovington, NM 88260

4. Well Location

Unit Letter M 567 feet from the South line and 161 feet from the West line

Section 31 Township 16S Range 35E NMPM County Lea

11. Elevation (Show whether DR, RKB, RT, GR, etc.)

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐
PULL OR ALTER CASING ☐ MULTIPLE COMPL. ☐
DOWNHOLE COMMINGLE ☐
CLOSED-LOOP SYSTEM ☐
OTHER ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☒ ALTERING CASING ☐
COMMENCE DRILLING OPNS ☐ P AND A ☐
CASING/CEMENT JOB ☐
OTHER ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Well began to make low quality Brine. Found Tubing Leak, Pull Tubing, set packer tested casing-passed test witness by OCD, drilled out old tubing, and re-entered with tubing, put well back on making 10# Brine. See Attached for detail description of workover.

Spud Date:

3/4/2022

Rig Release Date

3/10/2022

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE



TITLE Consultant

DATE March 19, 2022

Type or print name Wayne Price E-mail address: wayneprice@q.com

PHONE 505-715-2809

For State Use Only

APPROVED BY:



TITLE Compliance Officer A

DATE 3/28/22

Conditions of Approval (if any):

575-263-6633

Workover Report Wasserhund, Inc Eidson State #1

3/4/2022 Rig up and install BOP. Tubing was stuck. 1st stretch test showed stuck at 1975'. 2nd showed 1900'. Worked tubing until it came free. POOH laying down the tubing. 63 full joints. Last full joint was 2" American drill pipe. There was a 2' piece of the 64th joint on the end. 1992' of tubing recovered. Last two joints were bent. Brought in 80 joints of yellow band 2 3/8" J55 tubing. RIH with 4' perforated sub with a bull plug on the end. Tagged up at 2022'. Worked down to 2029' with tongs and could go no further. Laid down 2 joints and SION.

3/5/2022 POOH with tubing. Picked up bit sub and 3 1/2" bit. RIH and tagged up at 1926'. Picked up swivel and drilled down to 2034'. Could no get further. Tubing torquing up badly. POOH dragging. Laid down 2 joints of twisted tubing. Believe it wrapped around the parted tubing left in the hole. SION. Will perform and MIT on the casing before attempting to reach the salt cavity.

3/7/2022 RIH with AD-1 and set at 1865'. Would not hold. Obtained some old records and believe the 4 1/2" liner was set at 1881' in 2008. POOH to 1834' and set packer. Pressured up to 550# and ran chart. Witnessed by Kerry Fortner with the Hobbs OCD. Good chart. POOH with the packer. RIH with 2 3/8" collar with and X bar welded on the end and dressed with Kut Rite. RIH to 1834' and SION.

3/8/2022 RIH to 1897' and picked up swivel. Tagged up at 2027' with 5' in on joint 65 and began to drill down. Took 5 hrs to drill down joint 65 to 2054'. Picked up 66th joint and drilled until the end of the day. TD 2081'. POOH with 1 joint and SION.

3/9/2022 Continued to drill down. Reached 2435' with joint # 77. Tubing was torquing up and the pressure at the reverse pump was gaining. Believe reached the bottom of the brine cavity. Laid down 1 joint, laid down the swivel, removed the BOP and hung the tubing in the wellhead. EOT at 2402'. Tubing is free and no pressure when pumping down the tubing. This depth is 144' deeper than the previous tubing depth reported from the work over in 2008 (TWS field ticket). EOT reported at 2258' in 2008.

3/10/2022 Rigged down. Nipped up the wellhead and replace bad connections. Place the cage around the wellhead and connected the flowline to the battery. Started the triplex and began to pump down the tubing, charging up the cavity. Normal pump pressure down the tubing as per Mr. Gandy.

Workover Report Wasserhund, Inc Eidson State #1

3/4/2022 Rig up and install BOP. Tubing was stuck. 1st stretch test showed stuck at 1975'. 2nd showed 1900'. Worked tubing until it came free. POOH laying down the tubing. 63 full joints. Last full joint was 2" American drill pipe. There was a 2' piece of the 64th joint on the end. 1992' of tubing recovered. Last two joints were bent. Brought in 80 joints of yellow band 2 3/8" J55 tubing. RIH with 4' perforated sub with a bull plug on the end. Tagged up at 2022'. Worked down to 2029' with tongs and could go no further. Laid down 2 joints and SION.

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3/10/2022 Rigged down. Nipped up the wellhead and replace bad connections. Place the cage around the wellhead and connected the flowline to the battery. Started the triplex and began to pump down the tubing, charging up the cavity. Normal pump pressure down the tubing as per Mr. Gandy.

Maple
1425 W. French Dr., Hobbs, NM 88240
Phone (575) 393-4101 Fax (575) 393-4130

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division Hobbs District Office

BRADENHEAD TEST REPORT

Operator Name Wasserkund Inc					API Number 30-025-26883				
Property Name Edson State					Well No 001				
Surface Location									
UT - 1st M	Section 31	Township 16 S	Range 35 E	Foot from 567	N 3 Line S	Foot from 162	Line W	Corner Lea	
Well Status Brine well									
YES	TA D WELL NO	YES	SHEATH NO	INJ	INJECTOR NO	SWD	OIL	PRODUCE GAS	DATE 3-7-22

OBSERVED DATA

	(A) Surface	(B) Internal	(C) Intersect	(D) Prod. Csg	(E) Status
Pressure	NA	NA	NA	0	0
Flow Characteristics					NOT INS
Puff	Y / N	Y / N	Y / N	Y / 0	CO2
Steady Flow	Y / N	Y / N	Y / N	Y / 0	WTR
Surges	Y / N	Y / N	Y / N	Y / 0	GAS
Down to nothing	Y / N	Y / N	Y / N	0 / N	Special flow
Gas or Oil	Y / N	Y / N	Y / N	Y / 0	Report for
Water	Y / N	Y / N	Y / N	Y / 0	to record if

Remarks - Please state for each string (A,B,C,D,E) pertinent information regarding bleed down or continuous build up if applies.

Brine well CSG MIT TEST

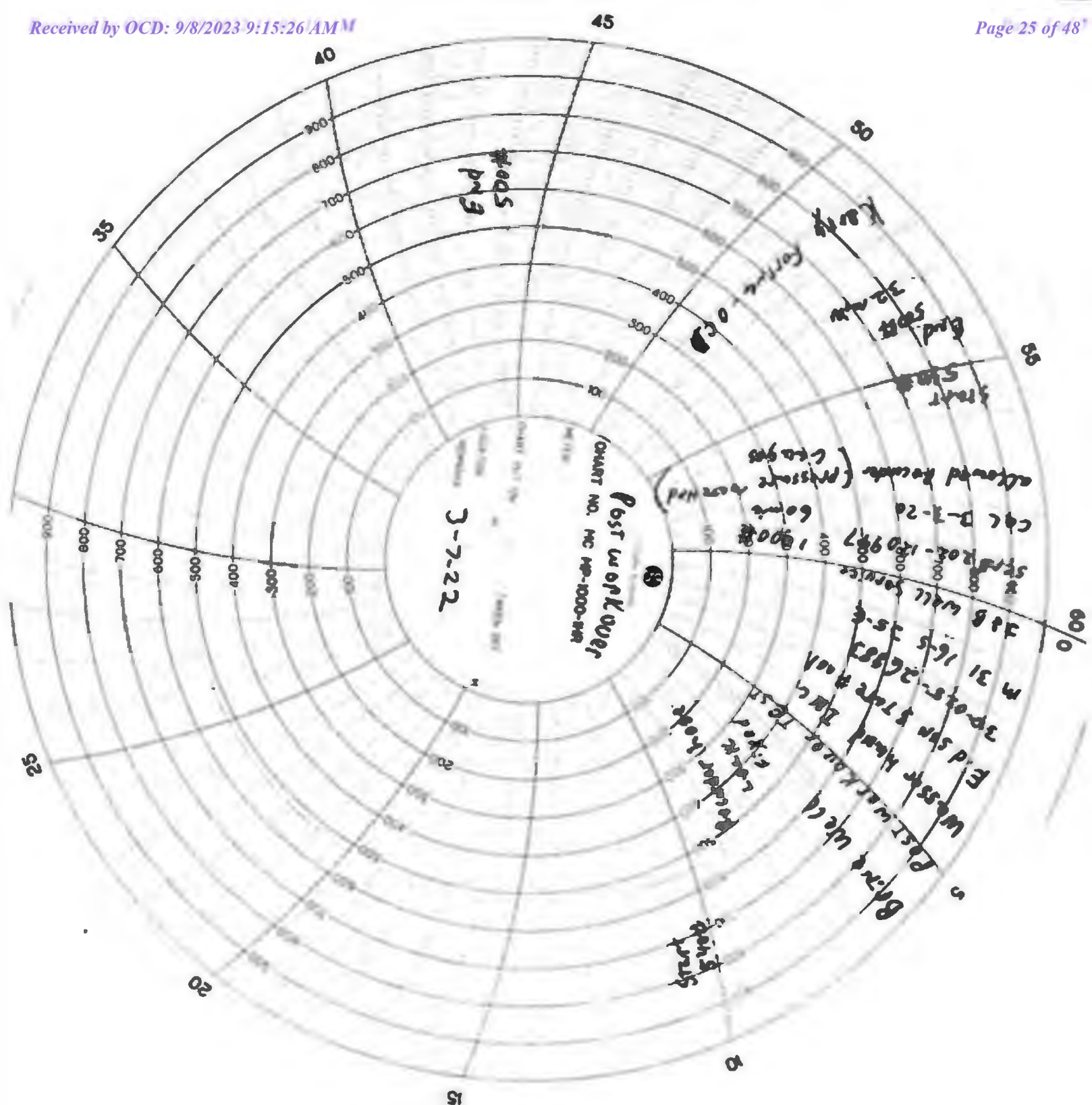
JTB Services

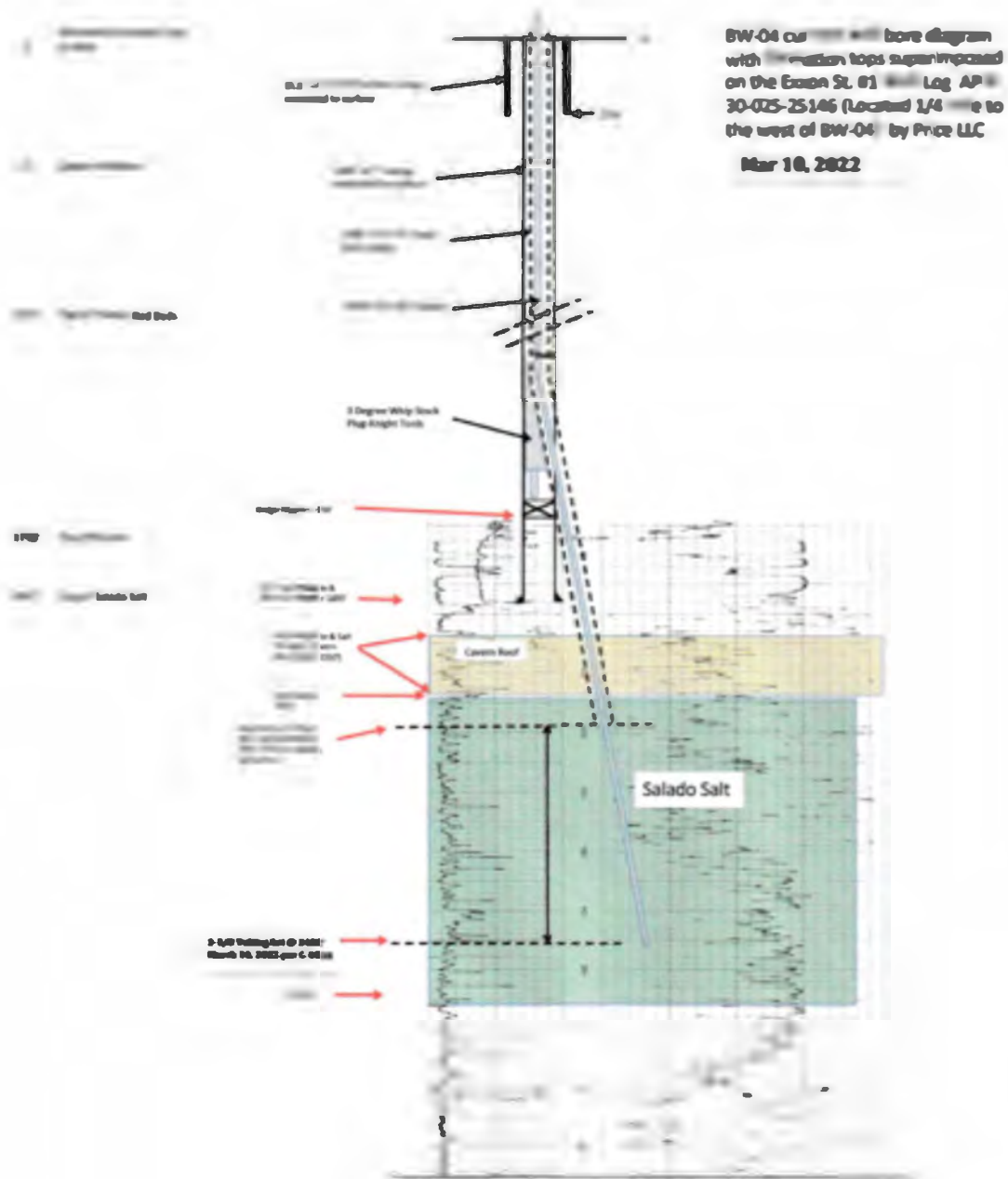
Ser # 202-120997

Cal 3-3-20 Allowed to use pressure stayed same as gauge

Signature		OIL CONSERVATION DIVISION	
Printed name		Entered into RBDMS	
Title		Re-test X 2	
E-mail Address			
Date	Phone		
Witness Kerry Farmer - OCD			

INSTRUCTIONS ON BACK OF THIS FORM





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 Rd., Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3470 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS
Addendum 91375

CONDITIONS

Origin:	WASSERHUND INC P.O. Box 2140 Lovington, NM 88260	OGRID:	130851
		Action Number:	91375
		Action Type:	[C-103] Sub. Workover (C-103R)

CONDITIONS

Created By	Condition	Condition Date
kfortner	None	3/28/2022

2022			
BW-04 Mass Balance			
Measured Salt (removed in Calculated Salt Removal)		Calculated Salt Removal	
Year End Total Production Volume	10,143,420 Bbls	Independent variable	
Average Density (Wg) produced water measured	9.8 lb/gal	Independent variable	Given from history
Average Salt Density-Est	80 lb/M3	Independent variable	Given from history
FT3/bbl	7.35 ft3/bbl	Independent variable	
Lbs of salt per gal	1.466 lb/gal	Dependent Variable	
Lbs of Salt per Bbl	80.63 (lb/bbl)	Dependent Variable	
Total Lbs of Salt Removed	817,063,305 LBS	Dependent Variable	
FT3 of salt removed	111,223,299 FT3	Calculated Salt Removal from Production Numbers	
Best Fit Worst Case Cone Calculation			
V = 111,223,299			
Radius	164.1 ft	Dependent Variable	
Height from Top	360 ft	Independent Variable	
Volume of Worst Case Cone	111,223,299 FT3	Calculated using "Worst Case Cone"	
	2% Within 10 % Passes		



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

April 25, 2022

WAYNE PRICE

WASSERHUND INC.

P.O. BOX 2140

LOVINGTON, NM 88260

RE: BUCKEYE BRINE STATION BW-04

Enclosed are the results of analyses for samples received by the laboratory on 04/13/22 12:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-21-14. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Coliform MMD-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celest D. Keene

Lab Director/Quality Manager



WASSERHUND INC.
P.O. BOX 2140
LOVINGTON NM, 88260

Project: BUCKEYE BRINE STATION BW-04
Project Number: EDISON BRINE STATION - QT 202
Project Manager: WAYNE PRICE
Fax To:

Reported:
25-Apr-22 17:23

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FRESH WATER	H221528-01	Water	13-Apr-22 11:00	13-Apr-22 12:40
BRINE WATER	H221528-02	Water	13-Apr-22 11:00	13-Apr-22 12:40

* = Accredited Analyte

[illegible]

Adly D. Karam

Celey D. Keene, Lab Director/Quality Manager



Project: BUCKEYE BRINE STATION BW-04
Project Number: EDISON BRINE STATION - QT 202
Project Manager: WAYNE PRICE
Fax To:

FRESH WATER
H221528-01 (Water)

Cardinal Labor Notes

Chloride*	12.0	4.00	mg/L	1	2041330	GM	20-Apr-22	4500-CL-B
pH*	6.08	0.100	pH Units	1	2041401	AC	14-Apr-22	150.1
Temperature °C	19.4		pH Units	1	2041401	AC	14-Apr-22	150.1
Specific Gravity @ 60° F	0.9934	0.000	[Blank]	1	2041406	AC	14-Apr-22	SM 2710F
TDS*	48.0	5.00	mg/L	1	2040702	GM	18-Apr-22	160.1

* = Accredited Analyte

6448 [970] ...and/or changes... cannot clearly or fairly represent them to any other group, whether based on interest or art, that he seems to be almost just to state by himself. He says, stating that he appears to be after such information also as internal record could make in writing well needed by Central when they will find the impression of the applicable facts. It is not said that Central has been the subject of investigation being made, which means business transactions, but if one is not fully insured by their job activities, offering no business entity can it be stated by the performance of the service provided by Central, regardless of what is done in Central's case. If the above stated results are obtained, there would also be the second statement below. The first part of the document needs to be set within context of Central's situation.

Chy. Deane

Celey D. Keene, Lab Director/Quality Manager



WASSERHUND INC.
P.O. BOX 2140
LOVINGTON NM, 88260

Project: BUCKEYE BRINE STATION BW-04
Project Number: EDISON BRINE STATION - QT 202
Project Manager: WAYNE PRICE
Fax To:

Reported:
25-Apr-22 17:23

BRINE WATER
H221528-02 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyte	Analyzed	Method	Notes
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Cardinal Laboratories

Chloride*	174000	4.00	mg/L	1	2041330	GM	20-Apr-22	4500-CL-B
pH*	6.34	0.100	pH Units	1	2041401	AC	14-Apr-22	150.1
Temperature °C	19.4		pH Units	1	2041401	AC	14-Apr-22	150.1
Specific Gravity @ 60° F	1.189	0.000	[blank]	1	2041406	AC	14-Apr-22	SM 2710F
TDS*	297000	5.00	mg/L	1	2040702	GM	8-Apr-22	160.1

Green Analytical Laboratories

Sodium*	97000	1000	mg/L	1000	B220993	A S	20-Apr-22	PA200
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Cardinal Laboratories

* = Accredited Analyte

AAVE spirit, "creativity and design" – cannot identify any specific designs created by any party during specific time or place or by any other means to the extent just to have the system. As such, finding that the system is not prior art invention and is deemed novel under law is wrong and incorrect as stated with said (3) that the invention of the multiple parties. It is not said that the system is based on scientific or technological design, finding, actual design, technology, but it can be said it is fully created by said its participants, offering an innovative way to be added to the performance of the service provided by finding, regardless of whether or not it could not be said it's the same design because it is unique, because said it is the design of the system. The design of the system is not to be said without approval of the participants.

Chrysothrix

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

WASSERHUND INC.
P.O. BOX 2140
LOVINGTON NM, 88260

Project: BUCKEYE BRINE STATION BW-04
Project Number: EDISON BRINE STATION - QT 202
Project Manager: WAYNE PRICE
Fax To:

Reported:
25-Apr-22 17:23

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%RBC	%RBC Limit	RPD	RPD Limit	Notes
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Batch 2040702 - Filtration

Blank (20-00702-DLK1)

Prepared: 07-Apr-22 Analyzed: 08-Apr-22

TDS	ND	5.00	mg/L
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LCS (200702-DS1)

Prepared: 07-Apr-22 Analyzed: 08-Apr-22

TDS	92	70	50	04	80-120
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Duplicate (2046702-DUP1)

Source: H221329-02

Prepared 07-Apr-22 Analyzed 08-Apr-22

100 984 500 mg/L 994 1.70 20

Batch: 2041330 - General Prep - Wet Chem

Bank (20130421)

Prepared & Analyzed: 13-Apr-22

Chloride	ND	4.0	mg/L
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LCS (204130-881)

Prepared & Analyzed: 13-Apr-22

Chloride	100	400	mg/L	100	100	80-120
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LCS Dup (2041330-BSD1)

Prepared & Analyzed: 13-Apr-22

Chloride	104	4.00	mg/L	100	104	80-120	3.92	20
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Batch 2041401 - General Prep - Wet Chem

LCS (2041401-B51)

Prepared & Analyzed: 14-Apr-22

pH	09	pH Units	100	01	90-110
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Duplicate (2041401-DUP1)

Source: A221316-01

Prepared & Analyzed: 14-Apr-22

pH	6.63	0.100	pH Units	6.59	0.605	20
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Immature °C	194	pH	parts	194	00
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Cardinal Laboratories

* = Accredited Analyte

4.6.66 407C. *Control and Design*. Control's hourly and clerical services for the job are being, whether based in control or not, and be based in the ground and to start to provide. It is also, including that, to replace a job, while some information that is shared about control work is being well needed by Control with the [20] that also complete in the appropriate system. It is not well Control be taken for incidents or emergency services, which, without obvious, business operations, that it is, or any of public should be clear, its activities, efforts or resources being, and it is stated in the performance of the service provided by Control, together of service to [20] it is not well that of the above stated situation is a situation. Through some use in the service provided [20]. The above use is not a statement based in the [20] with the [20] of Control's operations.

Chy. D. K. -

Celey D. Keene, Lab Director/Quality Manager



WASSERHUND INC.
P.O. BOX 2140
LOVINGTON NM, 88260

Project: BUCKEYE BRINE STATION BW-04
Project Number: EDISON BRINE STATION - QT 202
Project Manager: WAYNE PRICE
Fax To:

Reported:
25-Apr-22 17:23

Cardinal Laboratories

Analyte	Batch	Reporting Limit	Units	Spike Level	Source Batch	%RBC	%RBC Limit	RPD	RPD Limit	Notes
---------	-------	-----------------	-------	-------------	--------------	------	------------	-----	-----------	-------

Duplicate (2041406-DUP1)

Source: A224529-01

Prepared & Analyzed: 14-Apr-22

Specific Gravity 60 F

0.9945

0 000

(blank)

0.9934

Q.111

20

Cardinal Laboratories

* = Accredited Analyte

[illegible]

Colby D. Kneass

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

WASSERHUND INC.
P.O. BOX 2140
LOVINGTON NM, 88260

Project: BUCKEYE BRINE STATION BW-04
Project Number: EDISON BRINE STATION - QT 202
Project Manager: WAYNE PRICE
Fax To:

Reported:
25-Apr-22 17:23

Total Recoverable Metals by ICP (E200.7) - Quality Control**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%RBC	%REC Limit	RPD	RPD Limit	Notes
Batch 8229993 - Total Recoverable by ICP										
Blank (B229993-BLK1)				Prepared: 19-Apr-22 Analyzed: 20-Apr-22						
Sodium	ND	1.00	mg/L							
LCS (B229993-BL1)				Prepared: 19-Apr-22 Analyzed: 20-Apr-22						
Sodium	1.56	1.00	mg/L	1.62		96.4	85-115			
LCS Dup (B229993-BL1)				Prepared: 19-Apr-22 Analyzed: 20-Apr-22						
Sodium	1.50	1.00	mg/L	1.62		92.6	85-115	4.09	30	

Cardinal Laboratories

**=Accredited Analyte

ALLAD SYSTEMS, Inc. and its subsidiaries, including ALLAD SYSTEMS, Inc. and its subsidiaries, warrant the data being printed, reported based on analysis of data that we receive from the amount paid for the analysis. We warrant, including those we are relying on, any other data, information and/or services used in the analysis and/or report made in writing and received by Cardinal within 30 days after completion of the applicable service. To the extent that Cardinal has been the recipient of information or services, including, without limitation, business information, and if such, or any of such, is provided to the customer, we warrant, including those we are relying on, the performance of the service provided by Cardinal, regardless of whether the data or information was provided to the customer in writing or otherwise. This warrant does not extend to the accuracy of the data or information provided to the customer by the customer.


Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature
-	Chloride by SM4500C-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*-Accredited Analyte

Cardinal Laboratories, LLC, 101 E. Marland, Hobbs, NM 88240, is a laboratory that provides analytical services to its clients. The laboratory is accredited by the National Association of Testing Organizations (NATOT) for the testing of water samples. The laboratory is also a member of the American Society for Testing and Materials (ASTM). The laboratory is committed to providing accurate and reliable results to its clients. The laboratory is also committed to providing excellent customer service. The laboratory is a member of the American Society for Testing and Materials (ASTM). The laboratory is committed to providing accurate and reliable results to its clients. The laboratory is also committed to providing excellent customer service.

Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST



101 East Maryland, Hobbs, NM 88240
(575) 383-2328 FAX (575) 383-2478

[illegible]

Cardinal cannot accept verbal changes. Please email changes to cardinal@cardinalabbey.com



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

August 17, 2023

WAYNE PRICE

WASSERHUND INC.

P.O. BOX 2140

LOVINGTON, NM 88260

RE: EIDSON BRINE STATION

Enclosed are the results of analyses for samples received by the laboratory on 08/10/23 10:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Coliform MMD-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celest D. Keene".

Celest D. Keene

Lab Director/Quality Manager



Project: EIDSON BRINE STATION
Project Number: QUARTERLY
Project Manager: WAYNE PRICE
Fax To:

10-Aug-23 10:40

ADDITIONAL INFORMATION: The undersigned hereby certifies that the information furnished herein is true and correct to the best of his knowledge, and that he is not aware of any information that would cause the information furnished herein to be false or misleading. The undersigned further certifies that the information furnished herein is not false or misleading in any material particular, and that he is not aware of any information that would cause the information furnished herein to be false or misleading in any material particular. The undersigned further certifies that the information furnished herein is not false or misleading in any material particular, and that he is not aware of any information that would cause the information furnished herein to be false or misleading in any material particular.

Page 2 of 9



WASSERHUND INC.
P.O. BOX 2140
LOVINGTON NM, 88260

Project: EIDSON BRINE STATION
Project Number: QUARTERLY
Project Manager: WAYNE PRICE
Fax To:

Reported:
17-Aug-23 12:45

H234288-01 (Water)

Analyte	Result	MDL	Reporting Unit	Units	Dilution	Batch	Analyte	Analyzed	Method	Name
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Cardinal Laboratories

Jumpstart Community

Chloride*	76.0	4.00	mg/L	1	3080941	AC	10-Aug-23	450-0-B
pH*	7.60	0.100	pH Units	1	3081034	AC	10-Aug-23	150.1
Temperature °C	19.8		pH Units	1	3081034	AC	10-Aug-23	150.1
Specific Gravity @ 60° F	0.9952	0.000	[blank]	1	3081043	AC	10-Aug-23	SM 2710F
TDS*	390	5.00	mg/L	1	3080724	AC	15-Aug-23	160.1

Cardinal Laboratories

* = Accredited Analyte

[illegible]

Chas. D. Kline

Celey D. Keene, Lab Director/Quality Manager



WASSERHUND INC.
P.O. BOX 2140
LOVINGTON NM, 88260

Project: EIDSON BRINE STATION
Project Number: QUARTERLY
Project Manager: WAYNE PRICE
Fax To:

Reported:
17-Aug-23 12:45

BRINE WATER
H234288-02 (Water)

Analyte	Result	MDL	Reporting Unit	Units	Dilution	Batch	Analyte	AnalyteID	Method	Notes
---------	--------	-----	-------------------	-------	----------	-------	---------	-----------	--------	-------

Cardinal Laboratories

Chloride*	210000	4.00	mg/L	1	3080941	AC	10-Aug-23	450-CL-B
pH*	6.75	0.100	pH Units	1	3081034	AC	10-Aug-23	150.1
Temperature °C	22.2		pH Units	1	3081034	AC	10-Aug-23	150.1
Specific Gravity @ 60° F	1.194	0.000	[blank]	1	3081043	AC	10-Aug-23	SM 2710F
TDS*	333000	5.00	mg/L	1	3080724	AC	15-Aug-23	160.1

Green Analytical Laboratories

Sodium*	110000	500	L	500	B232381	A S	16-Aug-23	PA200
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Cardinal Laboratories

* = Accredited Analyte

AAVE (the "Lending and Borrowing" contract) clearly gives users leverage, access to any form of digital asset, whether based in central or off-chain, to serve as the initial step to start the system. As such, creating trust in reputation is an early trust milestone able to interact around central bank in setting and monitor its limited while still (3) how the reputation of the applicable assets. It is not until that Central bank has the authority to demonstrate formal lending, which means having credibility, that it can in fact of fully ability to meet its obligations, offering an incentive to ensure any use of it placed in the performance of the service provided by lending, reputation of assets in loan (Central bank) or (the other three) is a critical, because even to the extent of the loan, the trust level of the borrower is not an off-chain system (Central bank).

City of New York

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

WASSERHUND INC.
P.O. BOX 2140
LOVINGTON NM, 88260

Project: EIDSON BRINE STATION
Project Number: QUARTERLY
Project Manager: WAYNE PRICE
Fax To:

Reported:
17-Aug-23 12:45

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spillover Level	Source Result	%RBC	%RBC Limits	RPD	RPD Limits	Notes
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Batch 3608724 - Filtration

Blank (3000724-BLK1)

Prepared: 09-Aug-23 Analyzed: 15-Aug-23

TDS	ND	\$ 00	Page 2
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LCS (3000724-B51)

Prepared: 09-Aug-23 Analyzed: 15-Aug-23

TDS	816	mg/l	1000	816	80-120
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Duplicate (3000724-DUP1)

Source: A234129-02

Prepared: 09-Aug-23 Analyzed: 15 Aug 23

126 96 5.00 85 124

Batch 3000941 - General Prep - Wet Chem

Block (300M1-BLK1)

Prepared 09-Aug-23 Analyzed 10-Aug-23

Chloride	ND	400	mg/L
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LCS (30041-051)

Prepared 09-Aug-23 Analyzed 10-Aug-23

Chloride	100	4.00	mg/L	100	00	80-120
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LCS Dup (300041-ESD1)

Prepared 09-Aug-23 Analyzed 10-Aug-23

Chloride	100	4.00	mg/L	100	100	100	80-120	00	20
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Batch 3061034 - General Prep - Wet Chem

LCS (30104-51)

Prepared & Analyzed: 10-Aug-23

pH 15 pH Units 100 02 90-110

Duplicate (2081034-DUP1)

Source: A234226-01

Prepared & Analyzed: 10-Aug-23

pH	2.03	0.100	pH Units	8.00	0.374	20
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Temperature °C	19.8	pH units	19.8	0.506
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43462 4075. *continuity and change*. *Continuity theory and change theories* concern the way aging people spend time in a context of life that is known to be subject just to time by accident. It seems, including that to represent a way of life with activities and in shared social roles that is getting not needed by (social) while living (20) has the implication that the activities become (i) not worth doing (social) or have to be reduced or discontinued because of aging, without knowing whether necessarily not if not, in case of people having to spend in activities, efforts or resources every one of it related to the performance of the activity (because of learning, regardless of anyone in that context) and all of the above stated aspects as evidence. *These are also the main findings above. The last one is to be discussed more in full with other aspects of similar processes.*

Chy. De. K. m.

Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

WASSERHUND INC.
P.O. BOX 2140
LOVINGTON NM, 88260

Project: EIDSON BRINE STATION
Project Number: QUARTERLY
Project Manager: WAYNE PRICE
Fax To:

Reported:
17-Aug-23 12:45

Inorganic Compounds - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%RBC	%REC Limit	RPD	RPD Limit	Notes
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Batch 3081043 - General Chem - Wet Chem

Duplicate (3081043-DUP1)

Source: R234289-01

Prepared & Analyzed: 10-Aug-23

Specific Gravity @ 60° F

0.9957

0.000

(blank)

0.9952

0.0472

20

Cardinal Laboratories

**=Accredited Analyte

WASSERHUND INC. (WATERHUND) is a company that provides water testing services to its customers. The company is located at 101 E. Marland, Hobbs, NM 88240. The company is a member of the National Water Research Institute (NWRI) and is a member of the American Water Works Association (AWWA). The company is also a member of the National Sanitation Foundation (NSF) and is a member of the International Association of Water and Wastewater Engineers (IAWWQ).

Celey D. Keene, Lab Director/Quality Manager



WASSERHUND INC.
P.O. BOX 2140
LOVINGTON NM, 88260

Project: EIDSON BRINE STATION
Project Number: QUARTERLY
Project Manager: WAYNE PRICE
Fax To:

Reported:
17-Aug-23 12:45

Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Sample Result	%RBC	%RBC Limit	RPD	RPD Limit	Notes
Batch B232381 - Total Recoverable by ICP										
Blank (B232381-BLK1)										
Sodium	ND	1.00	mg/L							Prepared: 15-Aug-23 Analyzed: 16-Aug-23
LCS (B232381-B51)										
Sodium	1.42	1.00	mg/L	1.62		87.9	85-115			Prepared: 15-Aug-23 Analyzed: 16-Aug-23
LCS Dup (B232381-B501)										
Sodium	1.42	1.00	mg/L	1.62		87.8	85-115	0.0806	30	Prepared: 15-Aug-23 Analyzed: 16-Aug-23

* = Accredited Analyte

[illegible]

Colby D. Kline

Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature
-	Chloride by SM4500-Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

**=Accredited Analyte

Cardinal Laboratories, LLC, 101 E. Marland, Hobbs, NM 88240, is a laboratory that provides analytical services to its clients. The laboratory is accredited by the National Association of Public Health Laboratories (NAPHL) for the testing of water samples. The laboratory is also a member of the American Public Health Association (APHA) and the American Water Works Association (AWWA). The laboratory is committed to providing accurate and reliable results to its clients and to maintaining the highest standards of quality and safety.

Celey D. Keene, Lab Director/Quality Manager



101 East Mainland, Hobbs, NM 88240
(575) 383-2326 FAX (575) 383-2478

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

6 of 6 pages

Company Name: <u>Wintersound, Inc.</u> Project Manager: <u>Wayne Price</u> Address: <u>70 Box 2673</u> <u>De Livingston</u> Phone #: <u>575 567-1403</u> Fax #: <u>575 567-7000</u> Project #: <u>Quarterly</u> Project Director: <u>Jim Gandy</u> Project Name: <u>Fielding Brine Studies</u> Sample Name: <u>Brine</u>				BILL TO P.O. #: <u>Wintersound, Inc.</u> <u>Box 2673</u> <u>De Livingston</u> Phone #: <u>575 567-1403</u> Fax #: <u>575 567-7000</u>		ANALYSIS REQUEST												
Lab I.D. <u>H234298</u> <u>1</u> <u>2</u>	Sample I.D. <u>Freshwater</u> <u>Brine water</u>	DATE <u>8-10-23</u> <u>1</u>	TIME <u>0830</u> <u>0830</u>	CL <u>CL</u>	pH <u>pH</u>	Spec Grav <u>Spec Grav</u>	TDS <u>TDS</u>	Sodium <u>Sodium</u>										

Received By: <u>[Signature]</u>		Received By: <u>[Signature]</u>		Received By: <u>[Signature]</u>	
Received By: <u>[Signature]</u>		Received By: <u>[Signature]</u>		Received By: <u>[Signature]</u>	
Received By: <u>[Signature]</u>		Received By: <u>[Signature]</u>		Received By: <u>[Signature]</u>	
Received By: <u>[Signature]</u>		Received By: <u>[Signature]</u>		Received By: <u>[Signature]</u>	
Received By: <u>[Signature]</u>		Received By: <u>[Signature]</u>		Received By: <u>[Signature]</u>	

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 Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

COMMENTS

Action 263318

COMMENTS

Operator: WASSERHUND INC P.O. Box 2140 Lovington, NM 88260	OGRID: 130851
	Action Number: 263318
	Action Type: [UF-DP] Brine Facility Discharge Plan (DISCHARGE PLAN BRINE EXTRACTION)

COMMENTS

Created By	Comment	Comment Date
cchavez	Annual Report 2023 was submitted in September of 2023 and later revised with an addendum and submitted to OCD on December 16, 2023 under a different Action ID# 295323.. OCD completed its review of the documents under the original Action ID# 263318 incorporating the newer addendum mentioned above into the original submittal with OCD review correspondence. Therefore, Action ID# 295323 will be rejected with an explanation.	1/9/2024

District I
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CONDITIONS

Action 263318

CONDITIONS

Operator: WASSERHUND INC P.O. Box 2140 Lovington, NM 88260	OGRID: 130851
	Action Number: 263318
	Action Type: [UF-DP] Brine Facility Discharge Plan (DISCHARGE PLAN BRINE EXTRACTION)

CONDITIONS

Created By	Condition	Condition Date
cchavez	Conditions of Approval: 1. In instances where the "Right Circular Cone" (RCC) mathematical algorithmic estimation of salt cavern "max. diameter" is applied in lieu of a Sonar Well Test; all future Cavern Calculations must be displayed with assumptions manually in a step-by-step derivation for OCD to review. 2. Consider employing the OCD's manual computation method applying the "Brine Well Working Group" 2009 Useful Brine Info. Sheet in the estimation of cavern void volume "V" and cavern height "h" to derive the max. cavern diameter employed in the OCD D/H Safety Ratio. 3. In instances where the Permittee disagrees with OCD's maturity estimation and permit sunset requirements, a Sonar Test may employed by the Permittee to determine the actual max. cavern diameter. A successful Sonar Test may be run by the Permittee at anytime during the permitting period.	1/9/2024