

Permit Hearing - Item #4b  
American Rockwool

**Executive Summary**  
**Application for Operating Permit**  
**N3-23-013G**



**Applicant/Owner:** American Rockwool Manufacturing, LLC  
c/o James M. Deibel, Sr.  
440 Jack Rabbit Road  
Nolanville, TX 76559  
Phone: (214) 882-1343

**Location of Wells:**

*Location description:* The well is located on contiguous tracts of land (PID 2508, PID 132517) totaling 77.07 acres, at 440 Jack Rabbit Road, Nolanville, Texas 76559.

Latitude 30.876146° Longitude -97.609419°

*Management Zone:* Belton Lake Management Zone

<b>Proposed Annual Withdrawal:</b>	<b>Proposed Beneficial Use:</b>	<b>Source Aquifer:</b>	<b>Nearest Registered &amp; Existing Wells:</b>
<b>Proposed Production:</b> Not-to-exceed 6 ac-ft or 1,955,106 gallons/year  <b>Maximum Rate:</b> 110-gpm  <b>Column Pipe:</b> 3-inch  <b>Horsepower Rating:</b> 25-HP	Industrial Use	Hensell Layer of the Middle Trinity Aquifer	<b><u>Well #N3-23-013G</u></b> has 3 wells within ½ mile.  1-Upper Trinity (Glen Rose) 1-Middle Trinity (Hensell) 1-Other (Alluvial)

**General Information**

American Rockwool Manufacturing, LLC is requesting an operating permit to produce groundwater from an existing well (N3-23-013G). The well is completed to 740 feet below land surface, screened in the Hensell Layer of the Trinity Aquifer at approximately 690 to 740 feet below land surface. The well is currently equipped with a 3-inch column pipe and 25-HP submersible pump rated at 150-gpm. This permit will authorize production to produce groundwater for industrial use at a proposed annual quantity not to exceed 6 acre-feet or 1,955,106 gallons per year, at a maximum pumping rate of 110 gallons per minute.

The well is located in the Belton Lake Management Zone described in District Rule 7.1, on contiguous tracts of land (PID 2508, PID 132517) totaling 77.07 acres, at 440 Jack Rabbit Road, Nolanville, Texas, Latitude 31.074866°/Longitude -97.569997°.

The Driller's Log reflects that the existing well was completed in June of 1998 by Tom Lovelace Water Well Drilling and Service. The well was not registered with the District under the previous owner, but a recent internal audit of environmental permits revealed the need for the well to be registered and permitted with the District.

Under Rule 6.11, an Emergency Operating Permit #1 (0-23-219) was issued on November 17, 2023, for no more than 2 acre-feet or 651,702 gallons of production for 75 days.

The Operating Permit application submitted September 20, 2024 by James M. Deibel, requested 20 ac-ft annually for operations based on estimated frequency of cooling pond refilling and on the flushing and refilling of other process water storage areas. After subsequent meter readings and recalculations of water used from June 4 – October 4, 2024, American Rockwool requested to amend the application request to 6 ac-feet annually.

A second Emergency Operating Permit #2 (0-24-219) was issued on September 26, 2024, for no more than 2.6 acre-feet or 845,959 gallons for 45 days.

#### **Per Rules 6.9 and 6.10**

In deciding whether or not to issue a permit, the Board must consider the following in accordance with Section 36.113(d) of the Texas Water Code:

- 1) Does the application contain all the information requested, is the application accurate? Does it meet spacing and production limitations identified by District Rules, and does it conform to all application requirements which include public notification and accompanied by the prescribed fees? (TWC 36.116(a)(1), TWC 36.113(d), Rule 6.9.1(a)(b)(1)(2), Rule 6.9.2(a)-(f), Rule 6.10.24(a)-(h), and Rule 9.5.1-2)**

The application has been deemed administratively complete and the requested information necessary to proceed is as follows:

- The existing well meets the tract size requirements associated with District Rule 9.5.2 for wells completed to the Middle Trinity in the Belton Lake Management Zone. The existing well was equipped with a 3-inch column pipe therefore the applicant is requesting a variance from the 2-inch column pipe limit since the well was completed on June 24, 1998, before the District was established.
- The application fee of \$900.00 for the Operating Permit has been received.
- The applicant and their representative have conducted all notification requirements in a proper manner per District Rules.

- 2) Is the proposed use of water dedicated to a beneficial use? (TWC 36.113(d)(3), District Rule 6.10.24(d), and District Rule 9.5.2 authority to serve as an industrial well per TCEQ requirements)**

The proposed production of groundwater for rockwool manufacturing is used to reduce particulate matter pollution and regulate process equipment temperatures is deemed a “beneficial use”.

The applicant is in compliance with TCEQ and should testify that such requirements are being met.

**3) Has the Applicant demonstrated under District Rule 5.2 the amount of groundwater requested to be produced under the proposed permit is necessary for the beneficial use identified in the application?**

During the usage period, Clearwater UWCD staff took monthly meter readings to help predict annual usage based on 4-day operations each week. The meter readings captured from June 4 through October 4, 2024 were used in the calculations. The applicant’s representative stated that no raw water material delivery or refilling of the cooling water pond took place during the usage period therefore these operations would require additional water usage beyond the 4-day run estimates necessitating 6 ac-ft.

The Board should consider the intended production in assessing whether the Applicant has sufficiently demonstrated the amount of groundwater requested is necessary for the beneficial use identified in the application.

**3) Has the applicant agreed to avoid waste and achieve water conservation? (TWC 36.113(d)(6) and Rule 6.10.24(f))**

The applicant should testify they understand per District Rule 6.10.24(f) that by signing the application form the applicant and their representative agreed to and states they will comply with the District’s Management Plan and District Rules in effect on October 11, 2023.

The applicant or his representative should testify to the importance of water conservation measures. The District hopes that the applicant states in testimony they do not intend to utilize the groundwater for other purposes beyond the expressed beneficial use and agrees to describe that their use of the groundwater will not be deemed a waste by conducting recapture and reuse strategies.

**4) Has the applicant agreed that reasonable diligence will be used to protect groundwater quality and that the applicant will follow well plugging guidelines at the time of well closure? (TWC 36.113(d)(7) and Rule 6.10.24(g)) and Rule 9.3.**

The applicant should testify that if the well deteriorates over time or becomes damaged in such a way that the well is inoperable, state law and district rules require such a well to be plugged before a replacement well is approved per District Rule 8.1.2.



**5) Will the proposed operating permit comply with the spacing and production limitations identified in District rules? (TWC 36.116(a)(1-2), TWC 36.116(c)&(d) and Rule 6.10.24(b), Rule 7.1 and Rule 9.5.2)**

The well is located in the Belton Lake Management Zone described in District Rule 7.1, is currently equipped with a 3-inch column pipe and 25-HP submersible pump.

In the Belton Lake Management Zone, a maximum column pipe size of 2-inches is allowed. The existing well was equipped with a 3-inch column pipe therefore the applicant is requesting a variance from the 2-inch column pipe limit since the well was completed on June 24, 1998, before the District was established. The minimum tract size of 10-acres is required, with a 660-foot spacing requirement from other wells completed to the same layer of the Trinity Aquifer. The 75-foot setback requirement from adjacent property lines.

The District's rules require a production limit based on acre-feet/year and described gallons/year. The proposed amount has been determined by the applicant for this review of the operating permit is for no more than:

*6 acre-feet/year or 1,955,106 gallons/year*

The applicant and their representative understand that the District will deliberate on the Operating Permit for groundwater production and deliberations will be based on the elements of the Permit Application.

More specifically these issues are considered in Items 6 & 7 below and with staff recommendations to address potential concerns of adjacent property owners and well owners within the potential radius of influence from future production.

**6) Will the proposed use of water unreasonably affect existing groundwater and surface water resources or existing permit holders (per TWC 36.113(d)(2))?**

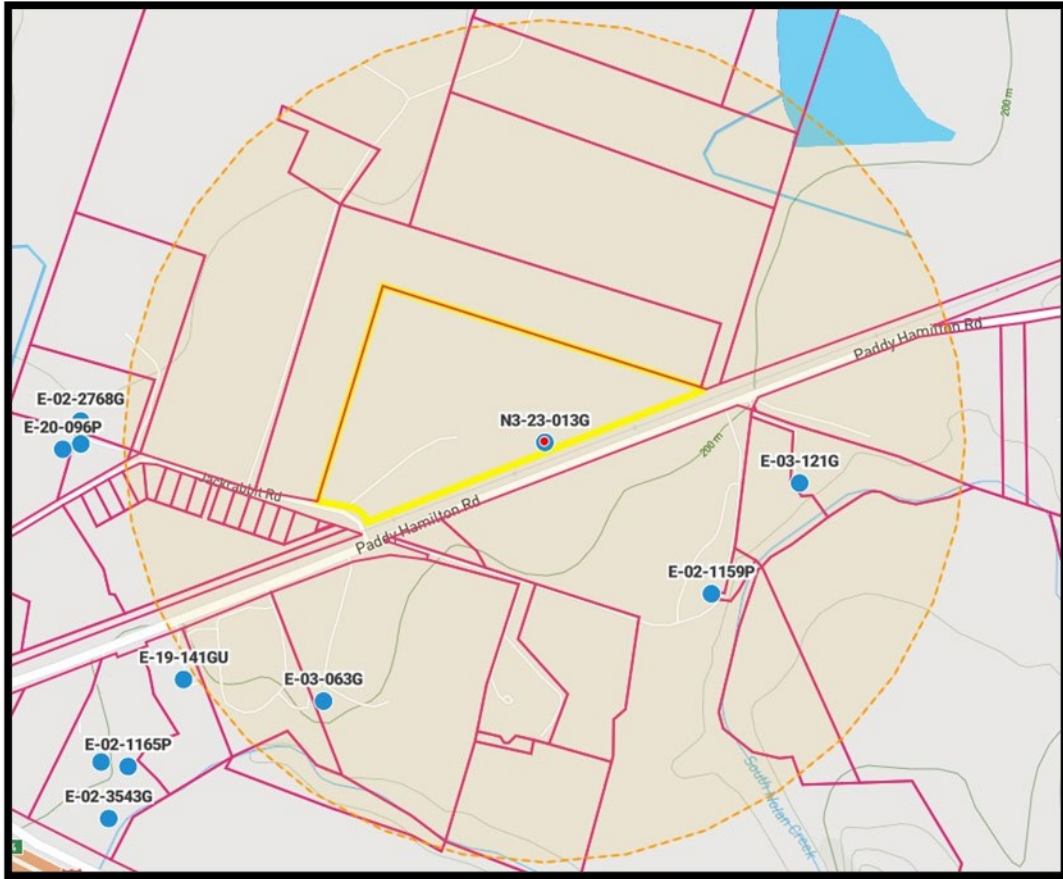
Based on available information, within ½ mile radius, there are **3** wells defined for domestic and livestock use, completed and active from the layers listed below.

**3 wells are within ½ mile radius of the proposed well,**

**1-Upper Trinity (Glen Rose)**

**1-Middle Trinity (Hensell)**

**1-Other (Alluvial)**



Mike Keester, KT Groundwater, has reviewed the application, determined the anticipated drawdown, and provided the attached MK report.

Keester states in his conclusions and recommendations the following:

*“The applicant originally applied for 20 acre-feet per year of production from the Middle Trinity Aquifer but reduced the request to 6 acre-feet per year based on projected demand. Information provided in the well completion report indicates the well can produce 110 gpm for at least 24 hours.*

*Measured water levels in the area suggest water level decline of 4.5 feet per year or more. The adopted DFC for Middle Trinity Aquifer in the District is 145 feet of average drawdown over a 71-year period which is equivalent to about 2 feet per year. Within the Belton Lake Management Zone the median water level decline is about 2.9 feet per year based on five CUWCD monitoring wells within the management zone.*

*Based on the modeling results, Middle Trinity wells within 1 mile are estimated to experience less than one foot of additional drawdown from the annual proposed production after one year due to the proposed production of 6 acre-feet per year. These additional drawdown does not include regional water level declines. Rather, the drawdown is in addition to any water level declines which may occur.*

*Based on the current water level trends and projected additional drawdown, there is about 30 years of water above the screen available at American Rockwool well (N3-23-013G). If water level decline trends increase, then the duration of water supply will decrease. Existing well owners near well N3-23-013G may need to set pumps within screen intervals within the next three decades if current Middle Trinity Aquifer water level trends persist.*

*Additional water-level monitoring will aid in assessing the long-term effects of cumulative groundwater production in the area and in informing local users of the groundwater availability. We recommend the applicant install a measuring tube to assess actual changes in water levels due to pumping from the well and regional water level declines.”*

Additionally, the District, to the extent possible, must issue permits up to the point the total volume of exempt and permitted groundwater production will achieve the applicable Desired Future Condition (DFC) per **TWC 36.1132(a)(b) and Rule 6.10.25(a)(b)(c)(d)(e)**.

**7) Is the proposed use of groundwater consistent with the District’s Groundwater Water Management Plan related to the approved DFC and the defined available groundwater for permitting?**

The District’s Management Plan reflects a groundwater availability figure in the Middle (Hensell Layer) Trinity Aquifer of 1,100 ac-ft/year Modeled Available Groundwater (minus the reserve 548 ac-ft/year for exempt well use) therefore 552 ac-ft/year is the Managed Available Groundwater for permitting established by the District.

The Board, per the District Management Plan, has evaluated groundwater available for permitting the Middle Trinity Aquifer and most recently evaluated the available groundwater for permitting (*consistent with the management plan*).

The requested permit amount relative to the modeled available groundwater MAG determined by the Texas Water Development Board (TWDB) based on the desired future conditions (DFCs) established by the District for the Middle Trinity Aquifer was set by CUWCD based on 137-ft of drawdown over 60-years. This was reviewed and again approved by the board in January 2022. To achieve this DFC, the TWDB used a model that indicated the MAG was equal to 1,100 ac-ft/year from the Middle Trinity.

HEUP & OP Permit Analysis and Exempt Well Reservations for the Middle Trinity, per District Report, illustrates current Middle Trinity Aquifer permits total 1,015.74 ac-ft/year. Currently, the District has no other pending permits, thus 84.26 ac-ft/year is available for permitting. *See attached Trinity Aquifer Status Report, October 9, 2024.*

**8) What are the Modeled Available Groundwater calculations determined by the Executive Administrator of the Texas Water Development Board?**

Refer to #7 above. The modeled available groundwater will not be exceeded by granting this permit. *See attached Trinity Aquifer Status Report, October 9, 2024.*

**9) What has the Executive Administrator of the Texas Water Development Board's estimate of the current and projected amount of groundwater produced under the exemptions in District Rule 6.3?**

Refer to #7 above. Reservation of Modeled available groundwater for exempt well use will not be exceeded by granting this permit. The exempt well reserve for the Middle Trinity is 548 ac-ft/year compared to 534 ac-ft/year estimated to be used annually from the Middle Trinity. See 2023 District exempt use report.

**10) What is the amount of groundwater authorized under permits previously issued by the District?**

Refer to #7 above. Existing permits do not exceed the managed available groundwater (*Modeled Available Groundwater – Reserved Exempt Well Use = Managed Available Groundwater*) for the Middle Trinity Aquifer which is 1,100 ac-ft per year.

**11) What is the reasonable estimate of the amount of groundwater that is produced annually under existing non-exempt permits issued by the District?**

The total permitted amounts for non-exempt wells in the Middle Trinity Aquifer in 2023 was 467.74 ac-feet/year and the actual production in 2023 was 44.70 ac-ft/year (9.56%) of the permitted amount. (*Figures are based upon monthly production reports submitted to Clearwater by the permit holders in 2023*).

**12) Yearly precipitation and production patterns.**

Clearwater is currently in no drought management stage based on the PDI system (average running total annual rainfall). The PDI for the Trinity Aquifer in the District is currently at 41.651 inches of rain received in the last 365 days (*as of 11/14/2024*) calculated at 126.22% of annual expected rainfall of 33 inches. The Trinity Aquifer permit holders in all of 2023 used 37.99% of the total permitted amounts in the Aquifer. Permit holders did not exceed their total permitted amounts in 2020, 2021, 2022, and 2023.

**Conclusions and Recommendations:**

- 1) District GM recommends that the Board approve the Operating Permit not-to-exceed 6 ac-ft or 1,955,106 gallons/year.
- 2) District GM recommends that the Board grant a variance from the 2-inch column pipe limit for the Belton Lake Management Zone since the well was completed and equipped with a 3-inch column pipe on June 24, 1998, both before the District was established and prior to the addition of management zones.
- 3) District GM recommends that the well be equipped with a meter for monthly recording of production in accordance with District Rule.

- 4) District should require the well owner to participate in the Districts continuous water level recorder program with a device provided and maintained by the District Staff.

Attachments are as follows:

<i>KT Groundwater Technical Memorandum</i>	<i>11/14/2024</i>
<i>CUWCD Trinity Aquifer Status Report</i>	<i>10/09/2024</i>
<i>CUWCD 2023 Exempt Well Estimate of Use Report</i>	<i>12/31/2023</i>
<i>Applications, Fees, and Notification Affidavits</i>	<i>See Attached</i>
<i>CUWCD Site Map</i>	<i>See Attached</i>
<i>State of Texas Well Report (Drillers Log)</i>	<i>6/24/1998</i>



ATTENTION OWNER: Confidentially  
Privilege Notice on on reverse side  
of Well Owner's copy (pink)

Send original copy by certified return receipt requested mail to: TNRCC, MC 177, P.O. Box 13087, Austin, TX 78711-3087

## State of Texas WELL REPORT

Texas Water Well Drillers Advisory Council  
MC 177  
P.O. Box 13087  
Austin, TX 78711-3087  
512-239-0530

1) OWNER American Rockwell Inc. (Name)  
ADDRESS P.O. Box 76559 (Street or RFD)  
McDonville, TX 76559 (City)  
40-60-5 (State)  
40-60-5 (Zip)

2) ADDRESS OF WELL: County Br 11  
3) TYPE OF WORK (check):  
☒ New Well  
☐ Deepening  
☐ Reconditioning  
☐ Pugging

4) PROPOSED USE (check):  
☒ Industrial  
☐ Irrigation  
☐ Infection  
☐ Public Supply  
☐ De-watering  
☐ Test Well  
☐ Domestic  
☐ Monitor  
☐ Environmental Soil Boring  
☐ If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) DRILLING METHOD (check):  
☒ Air Rotary  
☐ Mud Rotary  
☐ Bored  
☐ Driven  
☐ Air Hammer  
☐ Cable Tool  
☐ Jetted  
☐ Other

6) Borehole Completion (check):  
☐ Open Hole  
☐ Underreamed  
☐ Gravel Packed  
☒ Straight Wall  
If Gravel Packed give interval ... from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

7) CASING, BLANK PIPE, AND WELL SCREEN DATA:  
Casing (ft.) To From Setting (ft.)  
Screen 40 690 740  
Gage 40 690 740

8) CEMENTING DATA [Rule 338.44(1)]  
Cemented from 0 ft. to 40 ft. No. of sacks used 4  
Cemented by Good cement  
Method used Good cement  
Distance to septic system field lines or other concentrated contamination 100 ft.  
Method of verification of above distance measured

9) SURFACE COMPLETION  
☒ Specified Surface Slab Installed [Rule 338.44(2)(A)]  
☐ Specified Steel Sleeve Installed [Rule 338.44(3)(A)]  
☐ Pileless Adapter Used [Rule 338.44(3)(b)]  
☐ Approved Alternative Procedure Used [Rule 338.71]

10) WATER LEVEL:  
Static level 304 ft. below land surface  
Date 6-24-98  
Artesian flow \_\_\_\_\_ gpm.  
Date \_\_\_\_\_

11) PACKERS:  
Type \_\_\_\_\_  
Depth \_\_\_\_\_

12) WATER QUALITY:  
Did you knowingly penetrate any strata which contained undesirable constituents?  
☐ Yes ☒ No  
If yes, submit "REPORT OF UNDESIRABLE WATER".  
Type of water? \_\_\_\_\_  
Depth of strata \_\_\_\_\_  
Was a chemical analysis made? ☐ Yes ☒ No

13) WELL TESTS:  
Type test: ☐ Pump ☒ Baller ☒ Jetted ☐ Estimated  
Yield: 227 gpm with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.

14) TYPE PUMP:  
☐ Turbine ☒ Jet ☐ Submersible ☐ Cylinder  
Depth to pump bows, cylinder, jet, etc., \_\_\_\_\_ ft.

15) COMPANY NAME: Can Love bore water well, Inc. (Type or print)  
ADDRESS: Rt. 2 Box 2406 (Street or RFD)  
McDonville, TX 76559 (City)  
40-60-5 (State)  
40-60-5 (Zip)

16) (Signed) \_\_\_\_\_ (Licensed Well Driller)  
Please attach electric log, chemical analysis, and other pertinent information, if available.  
(Registered Driller Trainee)

## Trinity Aquifer Status Report – October 2024

<u>DFC Analysis Over Time</u> (2000-Present) Modeled Available Groundwater			<u>HEUP and OP Permit Analysis</u> Relative to the Modeled Available Groundwater			<u>2024 YTD</u> <u>Total Prod.</u> Jan - Sep 1266.21 ac-ft 24.79%		<u>Pending</u> <u>Applications</u>		<u>Exempt Well Reservations</u>		
Trinity Aquifer (by layer)	DFC Adopted * Average Drawdown (by layer)	MAG ** Ac-ft	HEUP Ac-ft (by layer)	OP Ac-ft (by layer)	Total Permitted Ac-ft (by layer)	2023 YTD Prod. (by layer)	2024 YTD Prod. (by layer)	Available for Permitting Ac-ft (by layer)	Pending Applications Ac-ft (by layer)	Exempt Well Reserve Ac-ft (by layer)	2023 Exempt Well Use Estimate Ac-ft (by layer)	Available Exempt Use Ac-ft (by layer)
		Current										
Pawluxy	NA	0	0	0	0	0	0	0	0			0
Glen Rose (upper)	-1.38 ft/yr -83 ft/60 yrs	275	61.9	72.73	134.63	35.94	4.49	0	0	140.37	190	0
Hensell (middle)	-2.28 ft/yr -137 ft/60 yrs	1100	259.3	208.44	467.74	44.70	30.29	84.26	0	548	534	14
Hosston (lower)	-5.50 ft/yr -330 ft/60 yrs	7900	1181.4	3324.99	4506.39	1860.31	1231.43	3215.49	***1146.6	178	60	118
Total		9275	1502.6	3606.16	5108.76	1940.95 (37.99%)	1266.21 (24.79%)	3299.75	1146.6	866.37	784	132

\*Desired Future Conditions (DFC) is the description of how the aquifer should look in the future (60 years).

\*\*The Modeled Available Groundwater (MAG) is the estimated amount of water available for permitting assigned to Clearwater UWCD by the Executive Administrator of TWDB.

\*\*\*Pending applications

City of Temple N3-23-004P (239 ac-ft/yr)

UMHB N3-23-005P (64 ac-ft/yr)

Mustang Springs N3-23-010P & N3-23-011P (249.8 ac-ft/yr)

Lake Thomas RV Resort N3-24-002P (16.8 ac-ft/yr)

Jarrell Schwertner WSC N3-24-008P (577 ac-ft/yr)



## CUWCD Exempt Well Use Summary

As of: 2/12/2024

Aquifer	Total Active Registered Exempt Wells <sup>3</sup>	Registered Domestic Wells	Estimated Domestic Use Gallons/Day <sup>1,2</sup>	Estimated Domestic Use Ac-ft/Year <sup>1,2</sup>	Registered Stock Wells	Estimated Stock Use Gallons/Day <sup>4</sup>	Estimated Stock Use Ac-ft/Year <sup>4</sup>	Total Estimated Use Gallons/Day <sup>7</sup>	Total Estimated Exempt Well Use Ac-ft/Year <sup>7</sup>	MAG Reserved Exempt Well Use
Glen Rose (Upper Trinity)	428	350	102,396	115	78	67,392	75	169,788	190	
Hensell (Middle Trinity)	993	931	423,297	474	62	53,568	60	476,865	534	
Hosston (Lower Trinity)	162	151	44,177	49	11	9,504	11	53,681	60	
Trinity (Total) <sup>6</sup>	1,583	1,432	569,870	638	151	130,464	146	700,334	784	1,419
Edwards BFZ	855	723	211,521	237	132	114,048	128	325,569	365	825
Edwards Equivalent	485	386	112,928	126	99	85,536	96	198,464	222	
Buda	28	15	4,388	5	13	11,232	13	15,620	17	
Lake Waco	8	3	878	1	5	4,320	5	5,198	6	
Austin Chalk	226	141	41,251	46	85	73,440	82	114,691	128	
Ozan	161	114	33,352	37	47	40,608	45	73,960	83	
Pecan Gap	67	44	12,873	14	23	19,872	22	32,745	37	
Kemp	15	11	3,218	4	4	3,456	4	6,674	7	
Alluvium	585	377	110,295	124	208	179,712	201	290,007	325	
Other <sup>5</sup>	1,575	1,091	319,183	358	484	418,176	468	737,359	826	
<b>CUWCD Total Active</b>	<b>4,013</b>	<b>3,246</b>	<b>1,100,574</b>	<b>1,233</b>	<b>767</b>	<b>662,688</b>	<b>742</b>	<b>1,763,262</b>	<b>1,975</b>	

1. Domestic use estimate assumes 106 gallons/person per day (USGS estimate of domestic use outside of a municipal water system) and 2.76 persons/household (U.S. Census Bureau, Population Estimates Program (PEP) July 1, 2019)

2. Benjamin G. Wherley, Ph.D. Associate Professor- Turfgrass Science & Ecology Dept. of Soil and Crop Sciences Texas A&M University estimate of 2,000ft<sup>2</sup> warm season turfgrass requires 38,855gal/yr/lawn or 106gal/day/lawn; "Ranchette" Avg. lawn size is 13,042ft<sup>2</sup>, 6.5X larger; 6.5 X 106gal/day/lawn= 689gal/day/lawn; ~217 "Ranchette" Middle Trinity Wells; 689 X 217=an additional 150,924gal/day/lawn; **490ac-ft/yr or an 89% increase in Middle Trinity exempt well use from the 2018 estimate of 258ac-ft/yr.**

3. Exempt well use estimate factors out all plugged, capped, monitor and inactive wells in the database.

4. Source of stock water estimates is Texas Agrilife Extension @ 18 gallons water per day per cow. Livestock water use estimates are based on the 2017 Census of Agriculture, USDA National Agricultural Statistics Service. 36,868 cows / 771 stock wells= 48 cows/stock well; 48\* 18gpd= 846 gal/day/stock well, **747ac-ft/yr or a 34% increase in annual stock use from the 2018 estimate of 556ac-ft/yr.**

5. The "Other" designation is the total of minor aquifer and alluvium source designation of the exempt wells.

6. Trinity Aquifer wells registered with unknown depth are assigned to the Middle Trinity per Board decision.

7. All estimates of groundwater use by exempt well owners is based on assumptions and scientific data, but by no means are they to be interpreted as recommended practices by CUWCD.



## KT Groundwater Memo



2804 Paradise Ridge Cove  
Round Rock, Texas 78665  
(512) 621-7237  
KTGroundwater.com  
TBPG Firm No. 50705

## Technical Memorandum

**To:** Mr. Dirk Aaron, General Manager  
Whitney Ingram, Assistant General Manager –  
Clearwater Underground Water Conservation District

**From:** Michael R. Keester, P.G.  
Alyssa B. Balzen, P.G.

**Date:** November 14, 2024

**Subject:** Hydrogeologic Evaluation of the American Rockwool Well (N3-23-013G)  
Permit Application

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**Proposed Well ID:** N3-23-013G

**Well Owner Name:** *American Rockwool  
Manufacturing, LLC*

**Tract Size:** 77.07 Acres

**Column Pipe Size:** 3 inches

**Aquifer:** *Middle Trinity*

**Management Zone:** *Belton Lake*

**Proposed Annual Production:** 6 acre-feet (1,955,106 gallons)

**Proposed Instantaneous Pumping Rate:** 110 Gallons per Minute

According to information provided in the permit application, the proposed production is for industrial use for production of building insulation operation (dust suppression, equipment cooling) and to provide water to American Rockwool Manufacturing, LLC for a process water cooling pond. The application initially requested 20 acre-feet per year of production but later reduced the request to 6 acre-feet per year (1,955,106 gallons per year). This projected water demand is based on the applicant's anticipated water usage at American Rockwool Manufacturing, LLC's facility.

Well N3-23-013G is completed and produces groundwater from the Middle Trinity Aquifer in the Belton Lake Management Zone. The application indicates the well is screened from 690 to 740 feet below ground level. However, the well completion report notes that the camera survey revealed the well is actually screened from 661 to 718 feet below ground level (Hughes and others, 2024). The CUWCD virtual bore indicates the Middle Trinity is about 675 feet below ground level and about 40 feet thick which is relatively consistent with the completion interval.

The applicant conducted a pumping test with the Middle Trintiy well and monitored a nearby well. As part of the hydrogeologic evaluation, we estimated transmissivity and storativity from the pumping test data. We used the aquifer parameters determined from the pumping test to estimate drawdown at nearby Middle Trinity wells under various production rate scenarios.

## **Aquifer Test**

The applicant conducted two multiday pumping tests using the American Rockwool Middle Trinity well (N3-23-013G) reportedly pumping 95 gallons per minute (“gpm”). Prior to the first pumping test, the applicant installed a datalogger (that is, transducer) in their Middle Trinity well to record changes in water level. The first test involved pumping the well between January 11, 2024 and January 12, 2024. The second pumping period started on January 18, 2024 at 12:02 and ended on January 19, 2024 at 2:30 p.m. No observation well was monitored during either pumping test. Following completion of the second pumping test the applicant left the transducer in the well and recorded water levels until January 22, 2024.

During the first pumping test water levels were generally decreasing within the pumping well, but the pump shut off intermittently throughout the test. To ensure a relatively constant rate during the pumping period, the applicant performed a second pumping test. During the second test, the rate was not constant (specifically, it declined from an initial value of 115 gpm to 95 gpm) but the pump was not shutdown during the test. Since the second pumping test did not have the same pumping rate issues that occurred during the first test, we focused our review of the aquifer hydraulic properties on the data from the second pumping test.

The static water level in the pumping well was reported as 433.44 feet below top of casing on January 18, 2024. Based on the transducer data, the pumping water level was 488.45 feet below top of casing at the end of the pumping period and 435.20 ft below top of casing at the end of the recovery period. Overall, there was about 55 feet of drawdown after 26.5 hours of pumping for a specific capacity of about 1.7 gallons per minute per foot of drawdown (“gpm/ft”). After 3 days of recovery following the pumping period the water level remained about 1.8 feet below the reported static water level. There is no indication in the recovery curve that pumping from other nearby wells affected the water level recovery.

Hughes and others (2024) utilized the Cooper-Jacob (Cooper and Jacob, 1946) method to determine aquifer parameters using the pumping test data. Their evaluation indicated a local transmissivity value of about 2,000 gallons per day per foot (“gpd/ft”). The calculated value may be slightly higher than presented by Hughes and others (2024) as they used the final pumping rate rather than the average pumping rate during the pumping period. Nonetheless, the pumping test results are a reasonable estimate of the local hydraulic conditions. The pumping well data did



not indicate any positive or negative flow barriers within the area of influence during the 26.5-hour pumping period.

Since storativity can only be calculated using observation well data, Hughes and others (2024) used the Northern Trinity and Woodbine Groundwater Availability Model (“NTWGAM”) value for the location. Initially, they incorrectly reported a specific storage value for the Hensell model cell (row 609, column 230) as  $4.9 \times 10^{-5} \text{ ft}^{-1}$  when this value is actually the storage coefficient (dimensionless) for the model cell. The Hensell (model layer 6) specific storage for the model cell is  $8.2 \times 10^{-7} \text{ ft}^{-1}$  (Kelley and others, 2014) which, when multiplied by the layer thickness of 59.61 ft, results in a storativity value of  $4.9 \times 10^{-5}$ . Upon discussion with the applicant’s hydrogeologist, the arithmetic error was confirmed and corrected for use in the projected drawdown calculations.

We compared Hughes and others (2024) calculated local aquifer properties to the values in the Clearwater Groundwater Management Model (“CGMM”). For the Middle Trinity layer, the CGMM has a transmissivity of 1,477 gpd/ft and a storage coefficient of  $1.5 \times 10^{-5}$  at the proposed well location (Keester and others, 2023). The CGMM transmissivity and storage coefficient values are similar to parameters determined from the pumping test and from the NTWGAM, respectively.

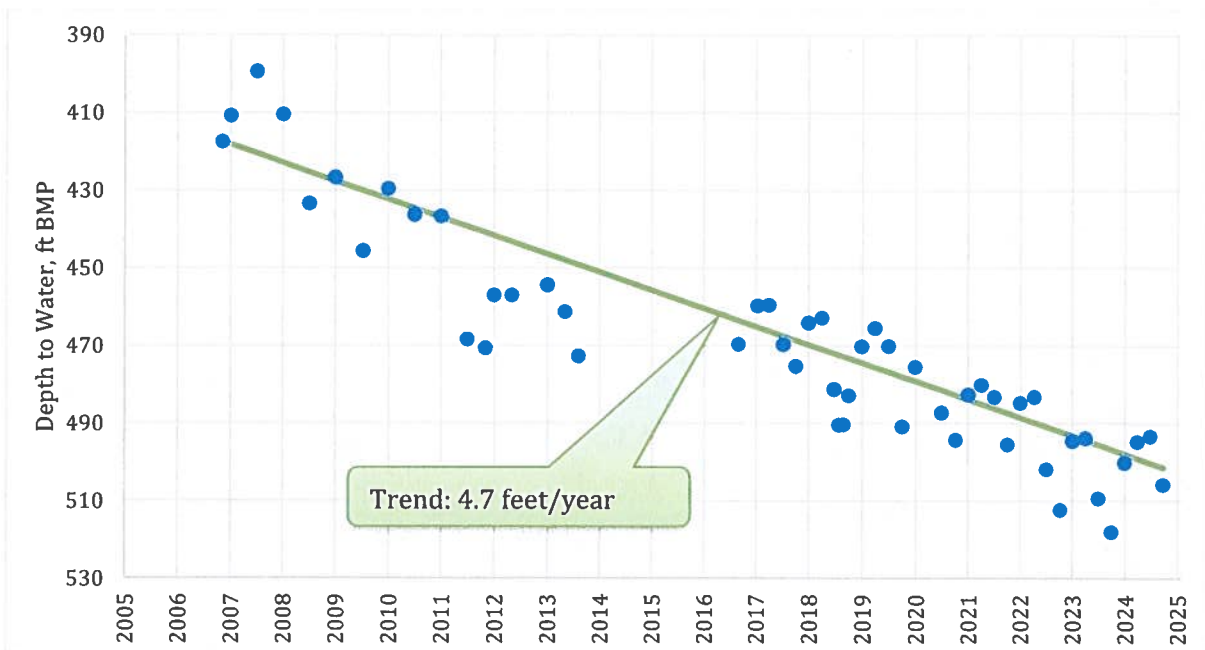
## Regional Drawdown

Based on data collected during the American Rockwool well pumping test, the depth to water in the Middle Trinity is currently about 433 feet below ground level. Based on monitoring well E-03-444P the Middle Trinity water level has been declining by about 4 to 5 feet per year since 2006 (Figure 1). Based on the top of the screen at 661 feet below ground level, there is currently about 228 feet of water above the top of the screen with about 47 feet of regional water level decline per decade. The pump in the American Rockwool well is reportedly set at 525 feet below ground level, providing about 92 feet of submergence.

The adopted desired future condition (“DFC”) for the Middle Trinity Aquifer is 145 feet of average drawdown across the District. For evaluation of compliance with the adopted DFC the District considers the average annual decline over the 71-year DFC period or 2.04 feet per year of average water level decline. Based on CUWCD’s monitoring well data (not including the American Rockwool well) and aquifer analysis tool (Keester and Pedrazas, 2020), the current average and median trend in measured water levels is 6.1 and 4.6 feet per year of decline, respectively. Within the Belton Lake Management Zone, the average decline trend is 3.5 feet per year with a median value of 2.9 feet per year based on five CUWCD monitoring wells.



Nearest to N3-23-013G, data indicate water levels are declining at an average rate of 4.7 feet per year. Assuming the applicant is able to continue operating the well at 110 gpm, experiences about 65 feet of drawdown when pumping for 24 hours based on the specific capacity, and requires about 20 feet of water above the pump to prevent cavitation, there is about 8 feet of available drawdown based on the current pump setting. If the pump is set at the top of the screen interval, there is no decline in specific capacity, water levels continue declining at a rate of 4.7 feet per year, and there is a minimum pump submergence of 20 feet, there is about 30 years of water available at the target pumping rate of 110 gpm.



**Figure 1. Middle Trinity CUWCD monitoring well E-03-444P. The well location is shown in Figure 2.**



## Projected Effect on Existing Wells

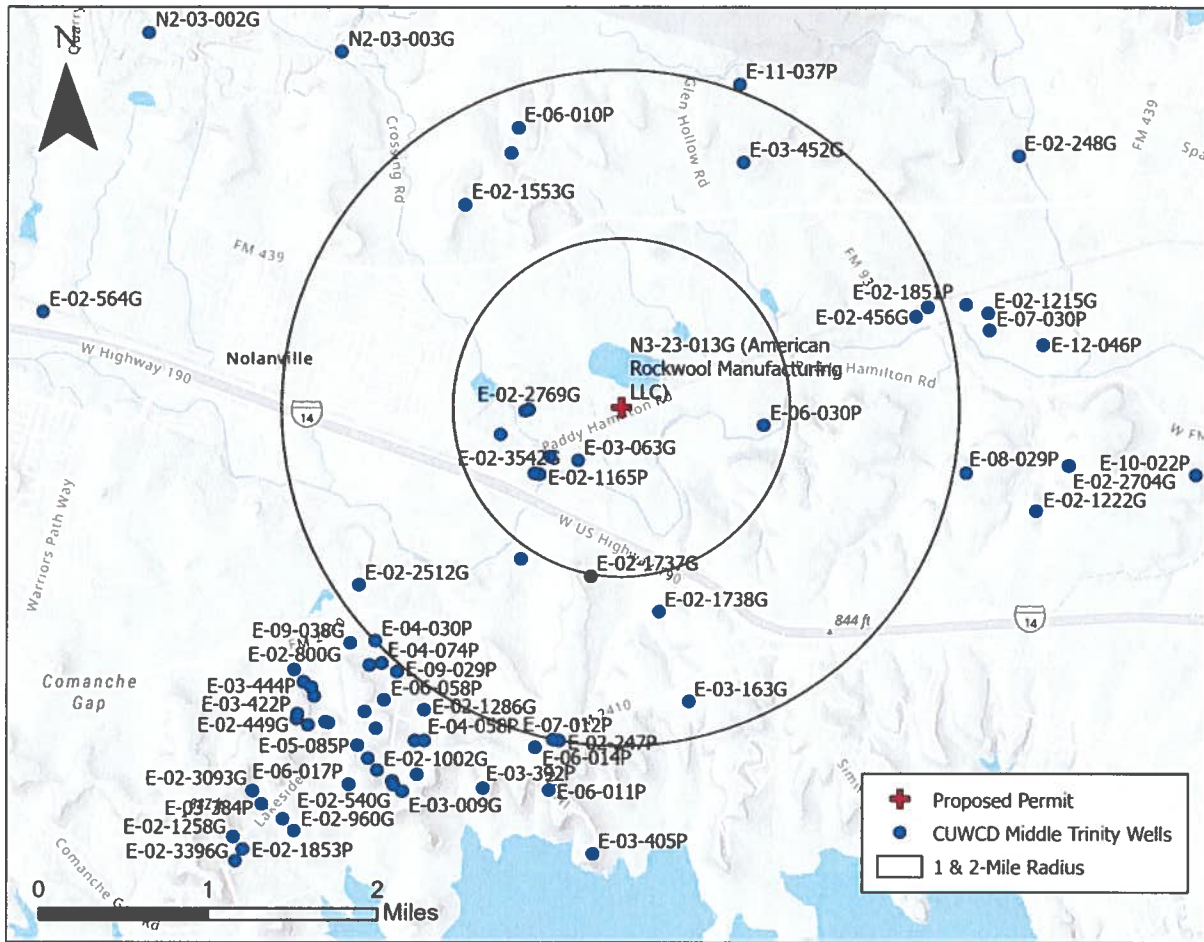
We estimated the potential effects of the proposed permit on local water levels in the Middle Trinity Aquifer using the Theis (1935) equation. For the Theis equation, we used a transmissivity value of 2,000 gpd/ft based on the results of the American Rockwool pumping test. Due to the uncertainty in the aquifer storativity value, we used the same value as the applicant's hydrogeologist of  $4.9 \times 10^{-5}$  from the NTWGAM.

The Theis equation relates water level decline (that is, drawdown) to the pumping rate of a well and properties of the aquifer. While the equation does not account for aquifer conditions which may affect the calculation of long-term water level declines (for example: aquifer recharge, faulting, or changes in aquifer structure), it does provide a very good, reliable, and straightforward method for estimating relatively short-term drawdown in and near a well due to pumping. To assess the potential effects from the proposed production, the equation uses values representative of the American Rockwool pumping test results. We used these values to assess the potential drawdown at the proposed well and at existing wells located within two miles of the proposed well (Figure 2).

Table 1 presents the calculated drawdown at the proposed permit and nearby wells completed in the same aquifer. For 1-Day Drawdown, we applied the proposed instantaneous pumping rate for a period of 24 hours. For 30-Day Drawdown, we assumed peak pumping during the summer of about 15 percent more than the average monthly amount (that is, the proposed annual production rate divided by 12 then multiplied by 1.15). For 1-Year Drawdown, we used the proposed annual production amount.

The predicted drawdown presented in Table 1 is based on our current understanding of the aquifer hydraulic properties and simulated production from the well. The predicted drawdown values presented do not include the effects from other wells pumping near the well. Predicted drawdown of one foot or less is considered negligible for analysis purposes due to inherent uncertainty in the aquifer hydraulic characteristics, modeling limitations, and limited effect the drawdown would have on existing groundwater users.





**Figure 2. The American Rockwool well and existing CUWCD active Middle Trinity wells.**





**Table 1. Calculated drawdown at the proposed and nearby Middle Trinity wells based on an instantaneous production of 110 gallons per minute and annual production rate of 6 acre-feet.**

CUWCD Well ID	Distance from Proposed Well (feet)*	1-Day Drawdown (feet)	30-Day Drawdown (feet)	1-Year Drawdown (feet)
<b>N3-23-013G</b>		65		
<b>American Rockwool</b>	—	(Spec. Cap.)	5	5
E-03-063G	2,133	7	<i>Negligible</i>	<i>Negligible</i>
E-19-141GU	2,709	5	<i>Negligible</i>	<i>Negligible</i>
E-02-2769G	2,911	5	<i>Negligible</i>	<i>Negligible</i>
E-20-096P	3,025	4	<i>Negligible</i>	<i>Negligible</i>
E-02-1165P	3,315	3	<i>Negligible</i>	<i>Negligible</i>
E-02-3542G	3,428	3	<i>Negligible</i>	<i>Negligible</i>
E-22-036P	3,880	2	<i>Negligible</i>	<i>Negligible</i>
E-06-030P	4,485	2	<i>Negligible</i>	<i>Negligible</i>
E-02-1737G	5,355	<i>Negligible</i>	<i>Negligible</i>	<i>Negligible</i>
E-19-154GU	5,710	<i>Negligible</i>	<i>Negligible</i>	<i>Negligible</i>
E-02-1738G	6,507	<i>Negligible</i>	<i>Negligible</i>	<i>Negligible</i>
E-02-1553G	8,017	<i>Negligible</i>	<i>Negligible</i>	<i>Negligible</i>
E-03-452G	8,563	<i>Negligible</i>	<i>Negligible</i>	<i>Negligible</i>
E-24-028P	8,708	<i>Negligible</i>	<i>Negligible</i>	<i>Negligible</i>
E-06-010P	9,346	<i>Negligible</i>	<i>Negligible</i>	<i>Negligible</i>
E-03-163G	9,444	<i>Negligible</i>	<i>Negligible</i>	<i>Negligible</i>
E-02-456G	9,595	<i>Negligible</i>	<i>Negligible</i>	<i>Negligible</i>
E-02-2512G	9,887	<i>Negligible</i>	<i>Negligible</i>	<i>Negligible</i>
E-02-1851P	10,021	<i>Negligible</i>	<i>Negligible</i>	<i>Negligible</i>
E-04-030P	10,584	<i>Negligible</i>	<i>Negligible</i>	<i>Negligible</i>

\*distance calculated from coordinates for the well as stored in the CUWCD database and are not necessarily the exact distance from the pumping well.





## Conclusions and Recommendations

The applicant originally applied for 20 acre-feet per year of production from the Middle Trinity Aquifer but reduced the request to 6 acre-feet per year based on projected demand. Information provided in the well completion report indicates the well can produce 110 gpm for at least 24 hours.

Measured water levels in the area suggest water level decline of 4.5 feet per year or more. The adopted DFC for Middle Trinity Aquifer in the District is 145 feet of average drawdown over a 71-year period which is equivalent to about 2 feet per year. Within the Belton Lake Management Zone the median water level decline is about 2.9 feet per year based on five CUWCD monitoring wells within the management zone.

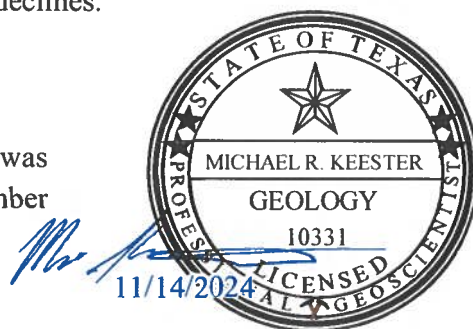
Based on the modeling results, Middle Trinity wells within 1 mile are estimated to experience less than one foot of additional drawdown from the annual proposed production after one year due to the proposed production of 6 acre-feet per year. These additional drawdown does not include regional water level declines. Rather, the drawdown is in addition to any water level declines which may occur.

Based on the current water level trends and projected additional drawdown, there is about 30 years of water above the screen available at American Rockwool well (N3-23-013G). If water level decline trends increase, then the duration of water supply will decrease. Existing well owners near well N3-23-013G may need to set pumps within screen intervals within the next three decades if current Middle Trinity Aquifer water level trends persist.

Additional water-level monitoring will aid in assessing the long-term effects of cumulative groundwater production in the area and in informing local users of the groundwater availability. We recommend the applicant install a measuring tube to assess actual changes in water levels due to pumping from the well and regional water level declines.

## Geoscientist Seal

The signature and seal appearing on this document was authorized by Michael R. Keester, P.G. on November 14, 2024.



Application



**American Rockwool Manufacturing, LLC**  
7250 Dallas Parkway, Ste 400  
Plano, Texas 75024

September 20, 2024

Dirk Aaron  
General Manager  
Clearwater Underground Water Conservation District  
PO Box 1989  
Belton, TX 76513

RE: Application for Non-Exempt Well Classification 3  
American Rockwool Manufacturing, LLC  
440 Jack Rabbit Road  
Nolanville, Texas 76559  
Application Submission Date: September 20, 2024

Dear Mr. Aaron;

By way of this letter, and attached permit application, American Rockwool Manufacturing, LLC (American Rockwool) is submitting an Operating Permit application for Non-Exempt Well Classification 3 to the Clearwater Underground Water Conservation District (CUWCD). The American Rockwool facility is comprised of 77.07 acres of land across two Bell County Assessor District tracts (property IDs 2508 and 132517). The subject well was installed on the southeastern end of the property in June 1998 and, during previous facility ownership, a subsequent grandfathering of the well was not completed with the CUWCD. This gap in registration was identified by American Rockwool during an internal audit of environmental permits and is the impetus for this application. INTERA Incorporated (INTERA) has been contracted by American Rockwool to perform application-specific well logging, pump testing, and reporting. American Rockwool will operate the well and well permit once approved.

The well is operational, and Tom Lovelace Water Well Drilling and Service (Tom Lovelace), a local well contractor, estimated the pumping capacity may be 110 gallons per minute (GPM). Tom Lovelace originally completed the well in 1998 and has performed subsequent equipment replacements in 2016 and 2021. A more accurate assessment of the well's production capacity and pump rate will be included in the well completion report produced by INTERA.

American Rockwool will utilize water from the existing well, in its rockwool manufacturing process, to reduce particulate matter pollution and regulate process equipment temperatures. Historically, process water needs were determined based on water drawdown in a process water cooling pond. When water levels dropped approximately 3 feet below maximum fill in

the cooling pond, water would be pumped from the well and added to the process until the cooling pond was refilled. Due to the historic lack of other methods to measure and meter water usage at the facility, pond volume calculations and refill frequencies were developed based on process knowledge to estimate the potential water usage requirements of the facility.

Based on the estimated frequency of cooling pond refilling and on the flushing and refilling of other process water storage areas, American Rockwool estimates that the facility operations may require at 20 acre-feet of water annually and, as such, is requesting up to 20 acre-feet for operations. An application fee check of \$1,000 (\$600 operating permit base fee plus 20 ac-ft times \$20.00 per ac-ft operating permit progressive fee) is attached for this Level III application. Once the facility returns to operation and accurate metering of water usage can be accomplished during regular facility production, a more precise estimate may be developed.

American Rockwool is also requesting a variance for the column pipe size from the CUWCD limit of a 2-inch column pipe to a size of 3-inches. This is required due to the completion of the well and installation of a 3-inch column pipe before the establishment of the CUWCD.

In addition to the attached "Application for Non-Exempt Well Classification 3", please also find copies of Tom Lovelace well and pump work invoices and a copy to the TCEQ Title V and PSD Air Permits for American Rockwool operations.

Please do not hesitate to contact me at 214-882-1343 or [jdeibel@americanrockwool.com](mailto:jdeibel@americanrockwool.com), or Jonathan Martensen at 936-524-0819 or [jmartensen@camstex.com](mailto:jmartensen@camstex.com), if you have any questions or require further information regarding this matter.

Sincerely,

A handwritten signature in blue ink, appearing to read "James M. Deibel, Sr.", is written over the typed name.

James M. Deibel, Sr.  
Manager



## Application for Non-Exempt Well Classification 3

Check one of the following:

- ☐ COMBINATION PERMIT  
☐ DRILLING PERMIT  
☒ OPERATING PERMIT  
☐ PERMIT AMENDMENT

Answer the following:

- Is this for a New Well? ☐ Yes ☒ No  
 Is this for a Replacement Well? ☐ Yes ☒ No  
 Do you plan to Export Water Outside District? ☐ Yes ☒ No  
 Are you modifying a Drilling Permit? ☐ Yes ☒ No  
 Are you modifying an Operating Permit? ☒ Yes ☐ No

### 1. Owner Information

Well Owner: American Rockwool Manufact Email: ideibel@americanrockwool.ca Telephone: 972-468-9122  
 Address (Street/P.O. Box, City, State, ZIP): 440 Jack Rabbit Flat Rd. Nolanville. TX 76559  
 Contact Person (if other than owner): James M. Deibel Telephone: 972-468-9122  
 If ownership of Well has changed, name the previous owner: \_\_\_\_\_ State Well #: \_\_\_\_\_

### 2. Property Location & Proposed Well Location

Owner of Property (if different from Well Owner): \_\_\_\_\_  
 The well is located in Management Zone: Belton Lake  
 Acreage: 77.07 Bell CAD Property ID #: 2508, 132517 Latitude: 31.074866 Longitude: -97.569997

### 3. Well Description (Submit if State of Texas Well Report is Available)

a. Proposed use of well and estimated amount of water, in acre-feet, to be used for each purpose:

- \_\_\_\_\_ \*Domestic; - \_\_\_\_\_ Livestock/Poultry; - \_\_\_\_\_ Agricultural/Irrigation;  
 - \_\_\_\_\_ \*\* Public Supply; 20 Industrial - \_\_\_\_\_ Other

\*Total number of houses to be serviced by the well 0

\*\* Applicant is required to give notice to TCEQ to obtain or modify a Certificate of Convenience and Necessity to provide water or wastewater service with water obtained pursuant to the requested permit.

b. Estimated distance, in feet, from the nearest:

100 N / S Property Line; 250 E / W Property Line; - \_\_\_\_\_ Existing Septic Leach Field  
800 River, Stream, or Lake; 1415 Existing Water Well; - \_\_\_\_\_ Livestock Enclosure;  
250 AST Other Source of Contamination (cemetery, pesticide mixing/loading, petroleum storage tank, etc.)

c. Estimated Rate of Withdrawal (GPM): 110

d. Is the Property subject to flooding? No

e. Is there another well on the property? No ; If YES, how many wells? \_\_\_\_\_

f. Is the well part of a multi-well aggregate system? No

If YES, list the State or District Well Numbers: \_\_\_\_\_

### REQUIRED BY LAW: Pump Installer / Well Driller Information

Name: Tom Lovelace Water Well Service Street Address: 4997 Elm Grove Rd  
 TDLR Pump Installer License #: 4920 City, State, ZIP: Belton, Texas, 76513-7611  
 TDLR Well Driller License #: 4920 Phone: 254-939-5073 Fax: 254-939-3513  
 Email: lovelacewaterwell@att.net

Name of Consultant preparing Application (if applicable): CAMS eSPARC

Con. Phone: 936-524-0819 Con. Fax: \_\_\_\_\_ Con. Email: jmartensen@camstex.com

#### 4. Completion Information

Provide the following information to the extent known and available at the time of application:

**Proposed Total Depth of Well:** 740 ft;

Borehole Diameter (Dia): 12 inches (in) from 0 to 40;

Dia (2) 8 in from 40 to 740;

Casing Material: Plastic; Inside Diameter (ID): 6 in;

Screen Type: Slotted; Screen Dia. 6 in from 690 to 740; # of Packers: \_\_\_\_\_

Pump Type: Submersible; Power: Electric; Horsepower Rating: 25;

Pump Depth: 525; Column Pipe ID: 3 in.

Date Completed: 6/24/1998

Proposed Water Bearing Formation: Middle Trinity; Management Zone: Belton Lake

#### 5. Operating Permit

Number of contiguous acres owned or leased on which water is to be produced: 77.07 acres

Total annual production requested with this operating permit: 20 acre-feet

If exporting water, what is the annual volume requested for export out of the District: - \_\_\_\_\_ Gallons

What is the annual volume requested for export as a % of total pumpage: - \_\_\_\_\_ %

If modifying an operating permit, what is the current, permitted annual production: - \_\_\_\_\_ ac-ft

What is the requested amount of annual production: 20 ac-ft

#### 6. Attachments

Include a statement/documentation explaining your requested production.

If amending an existing permit, explain the requested amendment and the reason for the amendment in a signed and dated letter, attached to this application.

If requesting operating permits or permit renewals for multiple wells, please attach a separate sheet with the information requested in Section 5 for each well.

If applicant plans to export water outside the District, address the following in an attachment and provide documents relevant to these issues:

- The availability of water in the District and in the proposed receiving area during the period requested
- The projected effect of the proposed export on aquifer conditions, depletion, subsidence, or effects on existing permit holders or other groundwater users within the District
- How the proposed export is consistent with the approved regional water plan and certified District Management Plan

For more attachments that may be needed, please see the *Full Summary of the Permit Application Process* document.

#### 7. Certification

*I hereby certify that the information contained herein is true and correct to the best of my knowledge and belief. I certify to abide by the terms of the District Rules, the District Management Plan, and orders of the Board of Directors. I agree to comply with all District well plugging and capping guidelines as stated in the District Rules.*

Typed Name of the Owner or Designee: James M. Deibel, Sr.

Signature:  Date: 9/20/24



# Payment Receipt

COPY

PAID  
9/20/24

Cash \$ 900.00  
Sec

Clearwater Underground Water Conservation

PO Box 1989  
Belton, TX 76513

Received From
American Rockwool

Date	9/20/2024
Payment Method	Cash
Check/Ref No	

Payment Amount	\$900.00
Total Amount Due	\$0.00

## Invoices Paid

Date	Invoice Number	Amount Due	Amount Applied
9/20/2024	231	\$900.00	\$900.00

**Clearwater Underground Water Conservation**  
PO Box 1989  
Belton, TX 76513

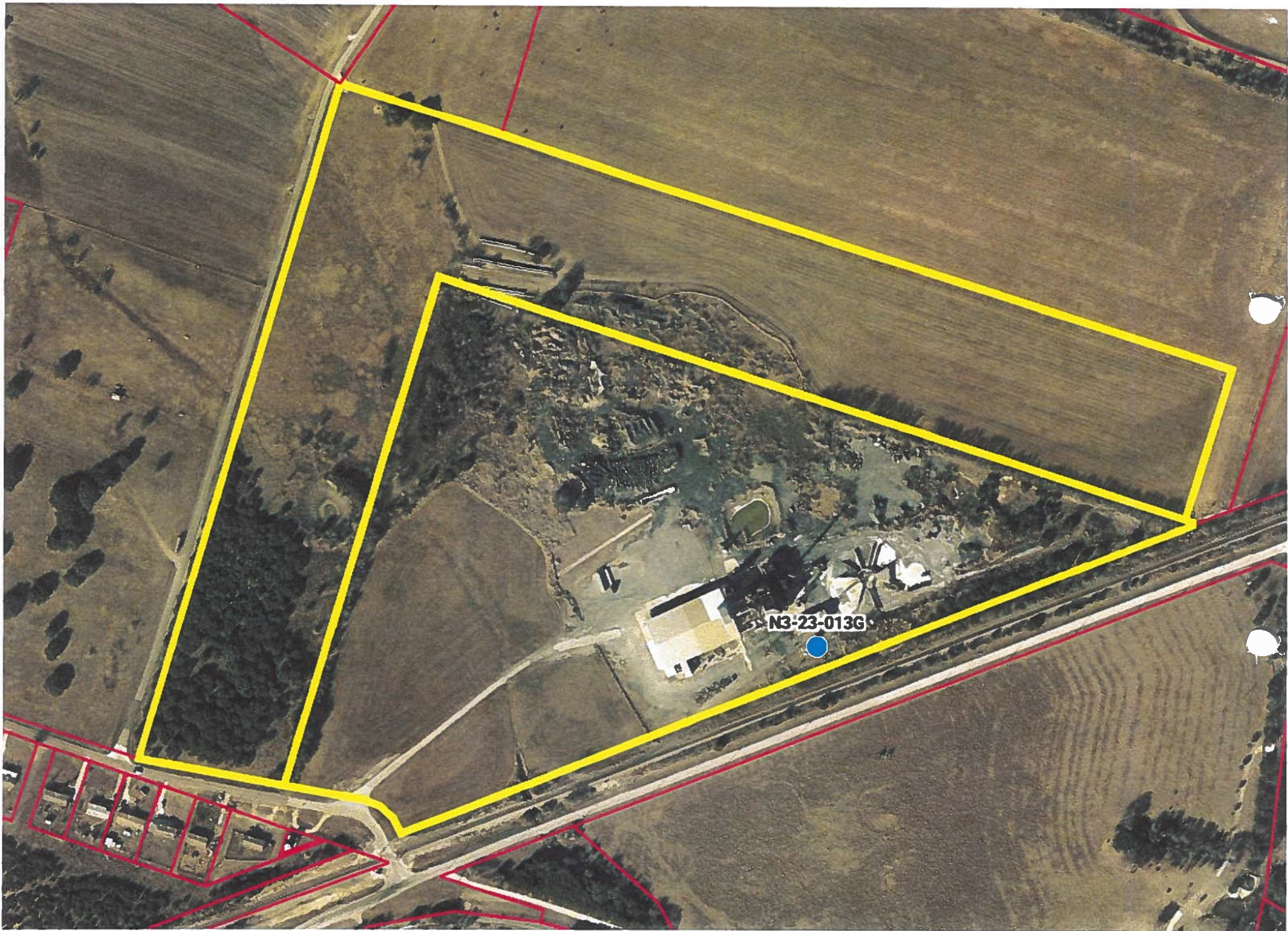
**Invoice**

**Invoice #:** 231  
**Invoice Date:** 9/20/2024  
**Due Date:** 9/20/2024  
**Project:**  
**P.O. Number:**

**Bill To:**  
American Rockwool

Date	Description	Amount
9/20/2024	Permit Application Fee operating permit 20 acre feet	900.00
Total		\$900.00
Payments/Credits		\$0.00
Balance Due		\$900.00







# Tax Appraisal District of Bell County Property Search

## Property ID: 132517 For Year 2023

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 Map

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### Property Details

#### Account

<b>Property ID:</b>	132517	<b>Geographic ID:</b> 0523860300
<b>Type:</b>	Real	<b>Zoning:</b>

#### Location

<b>Situs Address:</b>	JACKRABBIT RD NOLANVILLE, TX	
<b>Map ID:</b>	31D09 AD3	<b>Mapsco:</b>
<b>Legal Description:</b>	A0379BC J HUGHS, (PT OF 77.070AC TRACT), ACRES 37.64	
<b>Abstract/Subdivision:</b>	A0379BC - J HUGHS	
<b>Neighborhood:</b>	LKILNORURL	

#### Owner

<b>Owner ID:</b>	810573
<b>Name:</b>	AMERICAN ROCKWOOL MANUFACTURING LLC
<b>Agent:</b>	RYAN, LLC

**Mailing Address:** 7250 DALLAS PKWY STE 400  
PLANO, TX 75024

**% Ownership:** 100.0%

**Exemptions:** For privacy reasons not all exemptions are shown online.

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## Property Values

<b>Improvement Homesite Value:</b>	\$0 (+)
<b>Improvement Non-Homesite Value:</b>	\$0 (+)
<b>Land Homesite Value:</b>	\$0 (+)
<b>Land Non-Homesite Value:</b>	\$561,482 (+)
<b>Agricultural Market Valuation:</b>	\$0 (+)
<b>Market Value:</b>	\$561,482 (=)
<b>Agricultural Value Loss: ?</b>	\$0 (-)
<b>Appraised Value:</b>	\$561,482 (=)
<b>Homestead Cap Loss: ?</b>	\$0 (-)
<b>Assessed Value:</b>	\$561,482
<b>Ag Use Value:</b>	\$0

Information provided for research purposes only. Legal descriptions and acreage amounts are for appraisal district use only and should be verified prior to using for legal purpose and or documents. Please contact the Appraisal District to verify all information for accuracy.

## Property Taxing Jurisdiction

**Owner:** AMERICAN ROCKWOOL MANUFACTURING LLC **%Ownership:** 100.0%

Entity	Description	Market Value	Taxable Value
CAD	TAX APPRAISAL DISTRICT, BELL COUNTY	\$561,482	\$561,482

CB	BELL COUNTY			\$561,482	\$561,482
JCTC	CENTRAL TEXAS COLLEGE			\$561,482	\$561,482
RRD	BELL COUNTY ROAD			\$561,482	\$561,482
SKIL	KILLEEN ISD			\$561,482	\$561,482
WCLW	CLEARWATER U.W.C.D.			\$561,482	\$561,482
WWC6	BELL COUNTY WCID #6			\$561,482	\$561,482

## Property Improvement - Building

## Property Land

Type	Description	Acreage	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
DLCP	DRY LAND CROPLAND	37.6400	1,639,598.40	0.00	0.00	\$561,482	\$0

## Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2024	N/A	N/A	N/A	N/A	N/A	N/A
2023	\$0	\$561,482	\$0	\$561,482	\$0	\$561,482
2022	\$0	\$280,741	\$0	\$280,741	\$0	\$280,741
2021	\$0	\$280,741	\$0	\$280,741	\$0	\$280,741
2020	\$0	\$280,742	\$0	\$280,742	\$0	\$280,742
2019	\$0	\$136,573	\$0	\$136,573	\$0	\$136,573
2018	\$0	\$121,940	\$0	\$121,940	\$0	\$121,940
2017	\$0	\$121,940	\$0	\$121,940	\$0	\$121,940
2016	\$0	\$97,555	\$0	\$97,555	\$0	\$97,555
2015	\$0	\$97,555	\$0	\$97,555	\$0	\$97,555
2014	\$0	\$97,555	\$0	\$97,555	\$0	\$97,555
2013	\$0	\$97,555	\$8,206	\$8,206	\$0	\$8,206

## Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
4/8/2016	1	WARRANTY DEED	TEXAS AMERROCK PARTNERS LP	AMERICAN ROCKWOOL MANUFACTURING LLC			20160001326!
5/15/2013	1	WARRANTY DEED	NOLANVILLE REAL ESTATE PROPERTIES LP	TEXAS AMERROCK PARTNERS LP			20130002105!
3/4/1994	16	WARRANTY DEED			03117	00400	

## Estimated Tax Due

### \*\*ATTENTION\*\*

Indicated amount may not reflect delinquent tax due beyond a 5-year history. Partial payments or contract payments may not be reflected. Quarter payments that are made according to Section 31.031 of the Texas Property Tax Code are not considered delinquent.

**\*\*PRIOR TO MAKING FULL OR PARTIAL PAYMENTS PLEASE CONTACT OUR OFFICE FOR A CURRENT AMOUNT DUE\*\***

**\*\*WE CANNOT GUARANTEE THE ACCURACY OF THE AMOUNT DUE LISTED BELOW\*\***

If Paid: 10/25/2023



[\\$ Pay 2023 Taxes](#)

Year	Taxing Jurisdiction	Tax Rate	Market Value	Taxable Value	Base Tax	Base Taxes Paid	Base Tax Due	Discount &
2023	BELL COUNTY	0.291400	\$561,482	\$561,482	\$1,636.16	\$0.00	\$1,636.16	

# Tax Appraisal District of Bell County Property Search

## Property ID: 2508 For Year 2023

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 Map

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### Property Details

#### Account

<b>Property ID:</b>	2508	<b>Geographic ID:</b> 0524060200
<b>Type:</b>	Real	<b>Zoning:</b>

#### Location

<b>Situs Address:</b>	JACK RABBIT RD NOLANVILLE, TX	
<b>Map ID:</b>	31D09 A84	<b>Mapsco:</b>
<b>Legal Description:</b>	A0379BC J HUGHS, 5-2, (PT OF 77.070AC TRACT), ACRES 39.43	
<b>Abstract/Subdivision:</b>	A0379BC - J HUGHS	
<b>Neighborhood:</b>	LKILNORURL	

#### Owner

<b>Owner ID:</b>	810573
<b>Name:</b>	AMERICAN ROCKWOOL MANUFACTURING LLC
<b>Agent:</b>	RYAN, LLC

**Mailing Address:** 7250 DALLAS PKWY STE 400  
PLANO, TX 75024

**% Ownership:** 100.0%

**Exemptions:** For privacy reasons not all exemptions are shown online.

---

## Property Values

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<b>Improvement Non-Homesite Value:</b>	\$0 (+)
<b>Land Homesite Value:</b>	\$0 (+)
<b>Land Non-Homesite Value:</b>	\$588,184 (+)
<b>Agricultural Market Valuation:</b>	\$0 (+)
<b>Market Value:</b>	\$588,184 (=)
<b>Agricultural Value Loss: ?</b>	\$0 (-)
<b>Appraised Value:</b>	\$588,184 (=)
<b>Homestead Cap Loss: ?</b>	\$0 (-)
<b>Assessed Value:</b>	\$588,184
<b>Ag Use Value:</b>	\$0

Information provided for research purposes only. Legal descriptions and acreage amounts are for appraisal district use only and should be verified prior to using for legal purpose and or documents. Please contact the Appraisal District to verify all information for accuracy.

## Property Taxing Jurisdiction

**Owner:** AMERICAN ROCKWOOL MANUFACTURING LLC **%Ownership:** 100.0%

Entity	Description	Market Value	Taxable Value
CAD	TAX APPRAISAL DISTRICT, BELL COUNTY	\$588,184	\$588,184

2014	\$0	\$102,192	\$0	\$102,192	\$0	\$102,192
2013	\$0	\$102,192	\$7,506	\$20,465	\$0	\$20,465

## Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
4/8/2016	1	WARRANTY DEED	TEXAS AMERROCK PARTNERS LP	AMERICAN ROCKWOOL MANUFACTURING LLC			201600013269
5/15/2013	1	WARRANTY DEED	NOLANVILLE REAL ESTATE PROPERTIES LP	TEXAS AMERROCK PARTNERS LP			201300021059
7/12/1984	16	WARRANTY DEED			01971	00222	

## Estimated Tax Due

### \*\*ATTENTION\*\*

Indicated amount may not reflect delinquent tax due beyond a 5-year history. Partial payments or contract payments may not be reflected. Quarter payments that are made according to Section 31.031 of the Texas Property Tax Code are not considered delinquent.

**\*\*PRIOR TO MAKING FULL OR PARTIAL PAYMENTS PLEASE CONTACT OUR OFFICE FOR A CURRENT AMOUNT DUE\*\***

**\*\*WE CANNOT GUARANTEE THE ACCURACY OF THE AMOUNT DUE LISTED BELOW\*\***

If Paid: 10/25/2023



\$ Pay 2023 Taxes

Year	Taxing Jurisdiction	Tax Rate	Market Value	Taxable Value	Base Tax	Base Taxes Paid	Base Tax Due	Discount
------	---------------------	----------	--------------	---------------	----------	-----------------	--------------	----------



CB	BELL COUNTY	\$588,184	\$588,184
JCTC	CENTRAL TEXAS COLLEGE	\$588,184	\$588,184
RRD	BELL COUNTY ROAD	\$588,184	\$588,184
SKIL	KILLEEN ISD	\$588,184	\$588,184
TNO	CITY OF NOLANVILLE	\$588,184	\$588,184
WCLW	CLEARWATER U.W.C.D.	\$588,184	\$588,184
WWC6	BELL COUNTY WCID #6	\$588,184	\$588,184

## Property Improvement - Building

## Property Land

Type	Description	Acreage	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
COMM	COMMERCIAL	5.0000	217,800.00	0.00	0.00	\$74,586	\$0
DLCP	DRY LAND CROPLAND	34.4300	1,499,770.80	0.00	0.00	\$513,598	\$0

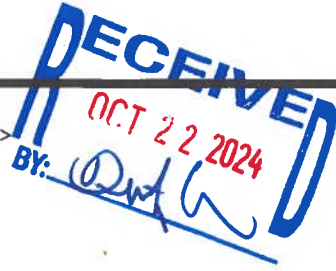
## Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2024	N/A	N/A	N/A	N/A	N/A	N/A
2023	\$0	\$588,184	\$0	\$588,184	\$0	\$588,184
2022	\$0	\$294,092	\$0	\$294,092	\$0	\$294,092
2021	\$0	\$294,092	\$0	\$294,092	\$0	\$294,092
2020	\$0	\$294,092	\$0	\$294,092	\$0	\$294,092
2019	\$0	\$143,068	\$0	\$143,068	\$0	\$143,068
2018	\$0	\$127,739	\$0	\$127,739	\$0	\$127,739
2017	\$0	\$127,739	\$0	\$127,739	\$0	\$127,739
2016	\$0	\$102,192	\$0	\$102,192	\$0	\$102,192
2015	\$0	\$102,192	\$0	\$102,192	\$0	\$102,192

# Application Amendment

## Whitney Ingram

**From:** Jonathan Martensen <jmartensen@camstex.com>  
**Sent:** Tuesday, October 22, 2024 12:28 PM  
**To:** Dirk Aaron  
**Cc:** Tristin Smith; Whitney Ingram  
**Subject:** RE: Request



### External Email

Yes, thanks for reaching out. I tried calling yesterday but I think I accidentally called your cell instead of your office.

American Rockwool would like to try to request 6 acre-ft of water for the well. They didn't have any raw material delivery or refilling of the cooling water pond during the usage period you looked at to estimate average usage, and both of these activities would require additional water usage beyond what they used during the handful of 4-day runs they had this summer. I wanted to run this by you first because I know CUWCD has their own calculated maximum allowable usage for the well. Jim understands that regardless of what Rockwool requests, the CUWCD will have the final decision in approving or revising down the total amount that will be permitted.

If you think that a request for 6 acre-ft is in the range of being reasonable, given the reasoning for additional water usage above, we would like to amend the request to 6 acre-ft, and American Rockwool understands that the Board may still reduce the total approved amount to a smaller volume at the CUWCD board meeting Nov 20th.

### Jonathan Martensen

Senior Environmental Associate I  
Office: 713-457-5232 | Cell: 936-524-0819

**From:** Dirk Aaron <daaron@cuwcd.org>  
**Sent:** Tuesday, October 22, 2024 12:14 PM  
**To:** Jonathan Martensen <jmartensen@camstex.com>  
**Cc:** Tristin Smith <tsmith@cuwcd.org>; Whitney Ingram <wingram@cuwcd.org>  
**Subject:** Request

**[EXTERNAL EMAIL]** DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe. If you believe you've received this email in error, or believe this is a phishing attempt contact Bluewire Help Desk

Jon,  
Per our recent conference call, we are holding up the application for a potential amendment to the permit application on the amount requested. Is an amendment to the application by email still in the works or is the application going to stand as is?  
If so we will move forward with sending you the notification letter and language for an advertisement to be in the Killeen Daily Herald.

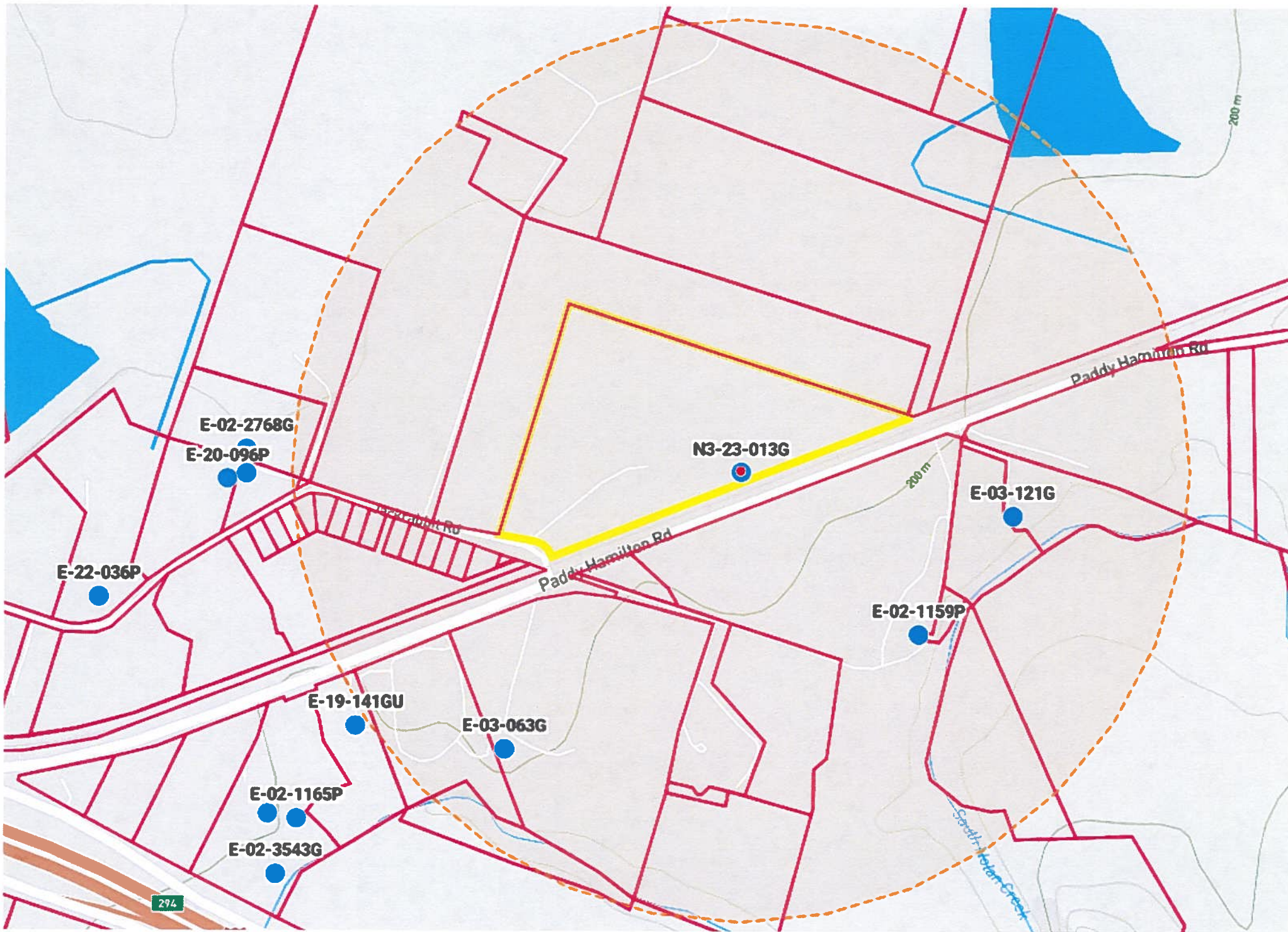
Dirk Aaron  
General Manager  
Clearwater Underground Water Conservation District  
[daaron@cuwcd.org](mailto:daaron@cuwcd.org)  
<http://www.cuwcd.org>  
254-933-0120 office  
254-534-4047 cell  
254-933-8396 fax



\*\*\*\*ATTENTION TO PUBLIC OFFICIALS AND OFFICIALS WITH OTHER INSTITUTIONS SUBJECT TO THE OPEN MEETINGS ACT \*\*\*\*  
A "REPLY TO ALL" OF THIS EMAIL COULD LEAD TO VIOLATIONS OF THE TEXAS OPEN MEETINGS ACT. PLEASE REPLY ONLY TO LEGAL COUNSEL.

*This message contains confidential information and is intended only for the named individual or individuals. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. The sender expressly reserves all privileges and confidentiality which might otherwise be waived as a result of an erroneous or misdirected transmission. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this message, which arise as a result of e-mail transmission. If verification is required please request a hard-copy version.*





**Wells 1/2 Mile**

**N3-23-013G Contact List**

<b>Prop ID</b>	<b>Name</b>	<b>Address</b>	<b>City</b>	<b>State</b>	<b>Zip</b>	<b>Well #</b>	<b>Status</b>	<b>Depth</b>	<b>Aquifer</b>	<b>Use</b>	<b>Distance</b>
80457	John Messer, Jr.	PO Box 259	Jarrell	TX	76537	E-03-121G	Active	425	Upper Trinity	Domestic	1631 ft
439967	John Messer, Jr.	PO Box 259	Jarrell	TX	76537	E-02-1159p	Active	50	Alluvial	Livestock/Poultry	1417 ft
99839	Wesley Brown & Patricia Brooks	9909 Paddy Hamilton Rd	Belton	TX	76513	E-03-063G	Active	725	Middle Trinity	Domestic	2138 ft
<b>Adjacent Property</b>											
132517	American Rockwool Manufacturing LLC	7250 Dallas PKWY Suite 400	Plano	TX	75024						
42662	Grandy Ranch LTD	PO Box 817	Killeen	TX	76540						
92997	John Messer	PO Box 969	Belton	TX	76513						
432306	John Messer, Jr.	PO Box 259	Jarrell	TX	76537						
518677	John Messer, Jr.	PO Box 259	Jarrell	TX	76537						
99839	Wesley Brown & Patricia Brooks	9909 Paddy Hamilton Rd	Belton	TX	76513						
238650	Michelle Ramos	447 Jackrabbit Rd	Belton	TX	76513						
233182	439 Water Supply Corporation	6202 Sparta Rd	Belton	TX	76513						
237642	439 Water Supply Corporation	6202 Sparta Rd	Belton	TX	76513						
316184	Jason Hancock	402 Messer Ranch	Belton	TX	76513						



## Notification

October 14, 2024

**NOTICE OF APPLICATION FOR DRILLING PERMIT**

*Name*  
*Address*  
*City, TX Zip*

**VIA CERTIFIED MAIL  
RETURN RECEIPT REQUESTED**

RE: Application for a Drilling Permit

To Whom It May Concern:

I, James Deibel, Sr., submitted an application on behalf of American Rockwool Manufacturing, LLC, to the Clearwater Underground Water Conservation District (CUWCD) on September 20, 2024, for an Operating permit to authorize production from an existing well.

The existing well (N3-23-013G) is completed to the Middle Trinity Aquifer (Hensell Layer), equipped with a 3-inch column pipe. This permit will authorize production to produce groundwater for industrial use at a proposed annual quantity not to exceed 6 acre-feet or 1,955,106 gallons per year, at a maximum pumping rate of 110 gallons per minute. The well is located in the Belton Lake Management Zone described in District Rule 7.1, on contiguous tracts of land (PID 2508, PID 132517) totaling 77.07 acres, at 440 Jack Rabbit Road, Nolanville, Texas, Latitude 31.074866°/Longitude -97.569997°.

This application will be set for hearing before the CUWCD Board upon notice posted at the Bell County Clerk's Office and the CUWCD Office. If you would like to support, protest, or provide comments on this application, you must appear at the hearing and comply with District Rule 6.10. For additional information about this application or the permitting process, please contact the CUWCD at 700 Kennedy Court, Belton, Texas 76513, 254-933-0120. The applicant may be contacted at 7250 Dallas Parkway Suite 400, Plano, TX 75024, 214-882-1343.

Sincerely,

James M. Deibel, Sr.  
Manager  
American Rockwool Manufacturing LLC

**NOTICE OF APPLICATION FOR AN OPERATING PERMIT FROM  
CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT**

James Deibel, Sr., has submitted an application, on behalf of American Rockwool Manufacturing, LLC, to the Clearwater Underground Water Conservation District (CUWCD) on September 20, 2024, for an Operating permit to authorize production from an existing well.

The existing well (N3-23-013G) is completed to the Middle Trinity Aquifer (Hensell Layer), equipped with a 3-inch column pipe. This permit will authorize production to produce groundwater for industrial use at a proposed annual quantity not to exceed 6 acre-feet or 1,955,106 gallons per year, at a maximum pumping rate of 110 gallons per minute. The well is located in the Belton Lake Management Zone described in District Rule 7.1, on contiguous tracts of land (PID 2508, PID 132517) totaling 77.07 acres, at 440 Jack Rabbit Road, Nolanville, Texas, Latitude 31.074866°/Longitude -97.569997°.

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N3-23 36 American Rockwood

9589 0710 5270 0383 0716 63

U.S. Postal Service  
**CERTIFIED MAIL® RECEIPT**  
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For delivery information, visit our website at [www.usps.com](http://www.usps.com).

Belton, TX 76513

Certified Mail Fee	\$4.85	0075
Extra Services & Fees (check box, add fee as appropriate)	\$0.00	50
<input type="checkbox"/> Return Receipt (hardcopy)	\$0.00	
<input type="checkbox"/> Return Receipt (electronic)	\$0.00	
<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00	
<input type="checkbox"/> Adult Signature Required	\$0.00	
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00	
Postage	\$0.73	
Total Postage and Fees	\$5.58	

Sent To: **John Messer**  
Street and Apt. No. or PO Box No.: **P.O. Box 969**  
City, State, ZIP+4®: **Belton, TX 76513**

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

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Killeen, TX 76540

Certified Mail Fee	\$4.85	0075
Extra Services & Fees (check box, add fee as appropriate)	\$0.00	50
<input type="checkbox"/> Return Receipt (hardcopy)	\$0.00	
<input type="checkbox"/> Return Receipt (electronic)	\$0.00	
<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00	
<input type="checkbox"/> Adult Signature Required	\$0.00	
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00	
Postage	\$0.73	
Total Postage and Fees	\$5.58	

Sent To: **GRANZY Ranch, LTD**  
Street and Apt. No. or PO Box No.: **P.O. Box 817**  
City, State, ZIP+4®: **KILLEEN, TX 76540**

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

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Jarrell, TX 76573

Certified Mail Fee	\$4.85	0075
Extra Services & Fees (check box, add fee as appropriate)	\$0.00	50
<input type="checkbox"/> Return Receipt (hardcopy)	\$0.00	
<input type="checkbox"/> Return Receipt (electronic)	\$0.00	
<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00	
<input type="checkbox"/> Adult Signature Required	\$0.00	
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00	
Postage	\$0.73	
Total Postage and Fees	\$5.58	

Sent To: **John Messer, Jr.**  
Street and Apt. No. or PO Box No.: **P.O. Box 259**  
City, State, ZIP+4®: **JARRELL, TX 76537**

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

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Belton, TX 76513

Certified Mail Fee	\$4.85	0075
Extra Services & Fees (check box, add fee as appropriate)	\$0.00	50
<input type="checkbox"/> Return Receipt (hardcopy)	\$0.00	
<input type="checkbox"/> Return Receipt (electronic)	\$0.00	
<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00	
<input type="checkbox"/> Adult Signature Required	\$0.00	
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00	
Postage	\$0.73	
Total Postage and Fees	\$5.58	

Sent To: **Wendy Brooks & Patricia Brooks**  
Street and Apt. No. or PO Box No.: **Highway Hamilton Road**  
City, State, ZIP+4®: **Belton, TX 76513**

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

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☐ Return Receipt (electronic) \$0.00  
☐ Certified Mail Restricted Delivery \$0.00  
☐ Adult Signature Required \$0.00  
☐ Adult Signature Restricted Delivery \$0.00  
Postage \$0.73  
Total Postage and Fees \$5.58  
Postmark Here  
11/04/2024

Sent To **Michelle Ramos**  
Street and Apt. No., or PO Box No.  
**441 FREEDOM RABBIT ROAD**  
City, State, ZIP+4®  
**Belton, TX 76513**

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

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Certified Mail Fee \$4.85 0075  
\$ 50  
Extra Services & Fees (check box, add fee as appropriate)  
☐ Return Receipt (hardcopy) \$0.00  
☐ Return Receipt (electronic) \$0.00  
☐ Certified Mail Restricted Delivery \$0.00  
☐ Adult Signature Required \$0.00  
☐ Adult Signature Restricted Delivery \$0.00  
Postage \$0.73  
Total Postage and Fees \$5.58  
Postmark Here  
11/04/2024

Sent To **439 WATER Supply Corporation**  
Street and Apt. No., or PO Box No.  
**6202 SPANISH ROAD**  
City, State, ZIP+4®  
**Belton, TX 76513**

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

N3-2-0136 American Rockwool

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Belton, TX 76513

Certified Mail Fee \$4.85 0075  
\$ 50  
Extra Services & Fees (check box, add fee as appropriate)  
☐ Return Receipt (hardcopy) \$0.00  
☐ Return Receipt (electronic) \$0.00  
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☐ Adult Signature Required \$0.00  
☐ Adult Signature Restricted Delivery \$0.00  
Postage \$0.73  
Total Postage and Fees \$5.58  
Postmark Here  
11/04/2024

Sent To **JASON HANCOCK**  
Street and Apt. No., or PO Box No.  
**402 WEBBER Ranch**  
City, State, ZIP+4®  
**Belton, TX 76513**

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

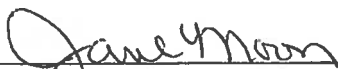
# Publisher's Affidavit

State of Texas  
County of Bell

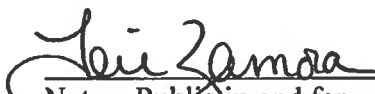
Before Me, The Undersigned Authority, this day personally appeared Jane Moon after being by me duly sworn, says that she is the Classified Manager, Inside Sales of the Temple Daily Telegram, a newspaper published in Bell County, Texas and that the stated advertisement was published in said newspaper on the following date(s):

November 6, 2024

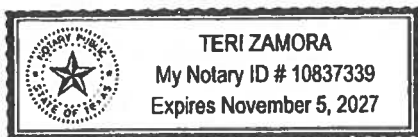
For: James Deibel, Sr.  
Ad #: 16695450  
Cost: \$145.00  
Times Published: 1

  
Jane Moon  
Classified Manager Inside Sales

Subscribed and sworn to before me,  
this day: November 11, 2024

  
Notary Public in and for  
Bell County, Texas

(Seal)



## NOTICE OF APPLICATION FOR AN OPERATING PERMIT FROM CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT

James Deibel, Sr., has submitted an application, on behalf of American Rockwool Manufacturing, LLC, to the Clearwater Underground Water Conservation District (CUWCD) on September 20, 2024, for an Operating permit to authorize production from an existing well.

The existing well (N3-23-013G) is completed to the Middle Trinity Aquifer (Hensell Layer), equipped with a 3-inch column pipe. This permit will authorize production to produce groundwater for industrial use at a proposed annual quantity not to exceed 6 acre-feet or 1,955,106 gallons per year, at a maximum pumping rate of 110 gallons per minute.

The well is located in the Belton Lake Management Zone described in District Rule 7.1, on contiguous tracts of land (PID 2508, PID 132517) totaling 77.07 acres, at 440 Jock Rabbit Road, Nolanville, Texas, Latitude 31.074866°N, Longitude -97.569997°W.

This application will be set for hearing before the CUWCD Board upon notice posted at the Bell County Clerk's Office and the CUWCD Office. If you would like to support, protest, or provide comments on this application, you must appear at the hearing and comply with District Rule 6.10. For additional information about this application or the permitting process, please contact the CUWCD at 700 Kennedy Court, Belton, Texas 76513, 254-933-0120. The applicant may be contacted at 7250 Dallas Parkway Suite 400, Plano, TX 75024, 214-862-1343.





# Emergency Permit



**Clearwater Underground Water  
Conservation District**  
P.O. Box 1989, Belton, TX 76513  
254-933-0120

## Emergency Operating Permit

**Permit No:** 0-24-219 (Emergency)

**Owner/Permittee:** American Rockwool Manufacturing LLC  
c/o: Mona Johnson [mjohnson@camsesparc.com](mailto:mjohnson@camsesparc.com)  
James Deibel Sr. [JDeibel@americanrockwool.com](mailto:JDeibel@americanrockwool.com)

**Mailing Address:** 7250 Dallas Parkway STE 400  
Plano, TX 75024

**District Well #:** N3-23-013G

**Terms:** Permit expires **November 10, 2024**. Permit Issued on September 26, 2024, per District Rule 6.10 pending Permit Hearing. Failure to abide by District/State rules and special provisions of issuance, will subject this agreement to revocation. See Page 2 for Standard Permit Conditions and Requirements.

**Maximum Permitted  
Withdrawal:** 845,959 gallons or 2.6 acre-feet

**Aquifer:** Hensell Layer (Middle) Trinity Aquifer

**Use:** Industrial Use

**Special Provisions:** Must provide Clearwater UWCD Field Staff weekly access to read the meter and capture water levels until November 10<sup>th</sup>, 2024.

This Permit is hereby issued this 26th day of September 2024.

By: Dirk Aaron, General Manager  
Dirk Aaron

Digitally signed by Dirk  
Aaron  
Date: 2024.09.26 10:03:55  
-05'00'

**Permit Conditions and Requirements**  
**Applicable to Drilling & Operating Permits**

All permits are granted subject to the Rules, regulations, orders, special provisions, and other requirements of the Board, and the law of the State of Texas. In addition, each permit issued shall be subject to the following conditions and requirements:

- A. The permit is granted in accordance with the provisions of Chapter 36, Texas Water Code, and the Rules, regulations and orders of the District as may be in effect from time to time, and acceptance of the permit constitutes an acknowledgement and agreement that the permittee will comply with all the terms, provisions, conditions, requirements, limitations, and restrictions embodied in the permit and with the Rules, regulations, and orders of the District.
- B. The permit confers no vested rights in the holder and the permit is transferable only upon compliance with the District's rules governing transfers. Written notice must be given to the District by the permittee prior to any sale or lease of the well covered by the permit. The permit may be revoked or suspended for failure to comply with its terms, which may be modified or amended pursuant to the requirements of State law and any applicable Rules, regulations and orders of the District.
- C. The well shall be located and completed as required in District rules and 16 Texas Administrative Code, Chapter 76.1000. The well shall observe spacing requirements specifically stated in the District rules.
- D. A permit shall be subject to amendment by the District of the amount of water authorized for pumpage based upon a review of the District's groundwater availability model and a determination by the District that an amendment is necessary after considering adequate water levels in water supply wells and degradation of water quality that could result from low water levels and/or low spring discharge.
- E. The drilling and operation of the well for the authorized use shall be conducted in such a manner as to avoid waste, pollution, or harm to the aquifers.
- F. The permittee, unless qualifying for a metering and reporting exception, shall 1) keep accurate records and meter readings, on a monthly basis, of the amount of groundwater withdrawn, the purpose of the withdrawal, and, for any transporting of water outside the District, the amount of water transported and the identity and location of the recipients; 2) report total withdrawals to the District monthly; and 3) make all records available for inspection at the permittee's principal place of business by District representatives. All permittees shall provide immediate written notice to the District in the event a withdrawal or transportation of water exceeds the quantity authorized by the permit or rules. Unless the permittee can present evidence that the pumpage or transport which exceeded the permitted amount is due to an isolated incident that is not likely to be repeated and/or would not result in continued higher demands, the permittee must immediately submit an application to increase the permitted pumpage or transport volume based on the amount of pumpage or transport which exceeded the permitted amount projected for the remainder of the year.
- G. The well site and transport facilities shall be accessible to District representatives for inspection during normal business hours and during emergencies. The permittee agrees to cooperate fully in any reasonable inspection of the well site or transport facilities and related monitoring or sampling by District representatives. The well owner shall provide a twenty-four (24) hour emergency contact to the District.
- H. The application pursuant to which this permit has been issued is incorporated therein, and this permit is granted on the basis of and contingent upon the accuracy of the information supplied in that application and in any amendment thereof. A finding that false information has been supplied shall be grounds for immediate revocation of a permit. In the event of conflict between the provisions of the permit and the contents of the application, the provisions of the permit shall prevail.
- I. Driller's logs must be submitted within sixty (60) days of the drilling of a well. Monitoring of groundwater pumpage is to be accomplished in the manner specified in the District's metering policy and any modifications thereto.
- J. Violation of the permit's terms, conditions, requirements, or special provisions, including pumping amounts in excess of authorized withdrawal or transporting amounts outside of the District in excess of the amount authorized for transport, shall be punishable by civil penalties as provided by State law and the District's Rules.
- K. If special provisions are inconsistent with other provisions or regulations of the District, the special provisions shall prevail.
- L. Permittee will notify the District upon filing an application with TCEQ to obtain or modify CCN to provide water or wastewater services in a service area that lies wholly or partly within the District or for which water shall be supplied from a well located inside the District.

**INTERA**  
**Well Completion Report**

# Well Completion Report

Clearwater UWCD Well ID: N3-23-013G  
440 Jackrabbit Flat Road, Nolanville, Texas 76559

Prepared for:



American Rockwool Manufacturing, LLC  
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SEPTEMBER 23, 2024





## GEOSCIENTIST AND/OR PROFESSIONAL ENGINEER SEAL(S)

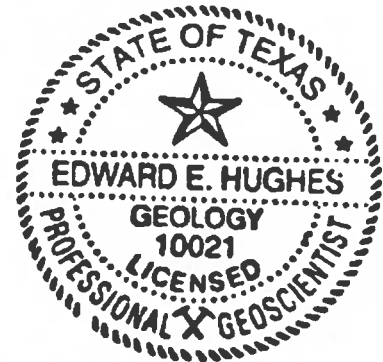
Ed Hughes, P.G.

*Ed Hughes (P.G. 10021) was the Project Manager for INTERA. All hydrogeologic work performed was performed under his review.*

Signature

9/23/2024

Date



Frank Roecker, P.G.

*Frank Roecker (P.G. 15488) was the Field Lead for INTERA and conducted or oversaw data acquisition discussed in this report.*

Signature

9/23/2024

Date



Clark Griffith, P.G.

*Clark Griffith (P.G. 12026) was responsible for organizing and analyzing the constant rate test data (Section 4), predicting the impacts of production from the well (Section 6), and documenting all hydrogeologic work in this report.*

9/23/2024





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## Acronyms and Abbreviations

AFY	acre-feet per year
ags	above ground surface
bgs	below ground surface
btoc	below top of casing
CUWCD	Clearwater Underground Water Conservation District
DHL	DHL Analytical
DTW	depth to water
ft	foot/feet
gpm	gallons per minute
hr	hour/hours
in	inch/inches
INTERA	INTERA Incorporated
Lovelace	Lovelace Water Well Service
mg/L	milligrams per liter
min	minute/minutes
mL	milliliters
NTWGAM	Northern Trinity and Woodbine Groundwater Availability Model
PVC	polyvinyl chloride
PWL	pumping water level
Rockwool	American Rockwool, LLC
SWL	static water level
TDS	total dissolved solids
TWDB	Texas Water Development Board
WCR	Well Completion Report



## 1.0 Background

INTERA Incorporated (INTERA) has prepared this Well Completion Report (WCR) for an industrial water well at the American Rockwool (Rockwool) facility located at 440 Jackrabbit Flat Road in Nolanville, Texas. The WCR has been requested by Clearwater Underground Water Conservation District (CUWCD) to bring the well into compliance with their current rules and regulations. The CUWCD well identification number for this well is N3-23-013G and the State of Texas Well Report for this well is included in **Appendix A**. The well report indicates the well was drilled to 740 feet below ground surface (ft bgs) on June 24, 1998 and completed with 6-inch diameter plastic well casing from two feet above ground surface (ft ags) to 690 ft bgs and 6-inch diameter slotted plastic well screen from 690 to 740 ft bgs. The borehole diameter is eight inches from 40 to 740 ft bgs. Reported lithology over the screened interval includes intervals of "water sand" and "lime." The well was originally reported to yield 200+ gallons per minute (gpm), when jetted, and the static water level (SWL) was reported to be 304 ft bgs at the time the well was completed.



## 2.0 Field Activities

INTERA personnel arrived at the well site on December 12, 2023, to oversee a GeoCam borehole camera survey to confirm well construction and evaluate the current state of the well. The camera survey used the top of the PVC well casing as a reference point, which sits 0.9 ft above ground surface. The well construction details observed in the field and camera survey and water level observed from the camera survey are as follows:

- 0 to 661.4 feet below top of casing (ft btoc): 6-inch sch. 80 blank PVC
- 661.4 to 718.5 ft btoc: 6-inch ID vertical slot sch. 80 PVC screen
- Total depth = 718.5 ft btoc
- Depth to water = 433.2 ft btoc

GeoCam also ran a gamma log survey downwell to correlate observations with the lithology given in the State Well Report. The original geophysical survey is included in **Appendix B**.

INTERA personnel returned to the site on January 11, 2024, to conduct a 24-hour pumping test at the Rockwool well. The static water level was measured to be 435.40 ft btoc. An In-Situ Level Troll 700 data logging pressure transducer was installed in the well's drop pipe to a depth of approximately 625 ft btoc and programmed to record pressure, temperature, and depth to water (DTW) at 1-second intervals for the first six hours and at 15-second intervals for the remainder of testing. The test began at 08:46 with the pump producing 110 gpm. The flow rate began to decrease as the water level in the well declined with continued pumping. Discharged water flowed into a holding tank before a booster pump transferred the water to a storage pond. At 12:21 the pump shut off for about one-half hour. It was postulated that the booster pump blew a fuse causing the downhole pump to shut off as well. The test resumed at 12:52 and continued overnight with plant personnel managing the discharged water.

INTERA personnel returned to the site on January 12, 2024, to complete the pumping test; however, it was discovered that the pump cycled off and on five times beginning at 5:00. Lovelace Water Well Service (Lovelace) arrived on site to troubleshoot the pump. The pump controller turned off the pump when the amperage draw dropped below ~28.9 amps. The pump controller cycled the pump back on after a 30-minute down period. Lovelace changed the setpoints on the pump controller to only shut off the pump if the amperage dropped below 24.5 amps instead of 28.9 amps. The decision was made to postpone the restart of the 24-hour pumping test until the following week because the groundwater level in the well was significantly below static and it would be a matter of days until recovery was complete. The downhole pressure transducer was left in place to record groundwater level recovery and background data.

INTERA personnel returned to the site to restart the 24-hour pumping test on January 18, 2024. The background data from the pressure transducer was downloaded and a new log was started. The new log was programmed to record data at 1-second intervals for eight hours and then to record at 15-second intervals for the remainder of the test. Lovelace was on site to ensure the pump controller was properly programmed. The pre-test water level was 433.5 ft btoc, as measured by the pressure transducer. The





24-hour pumping test commenced at 12:00 at a flow rate of 115 gpm; the flow rate dropped to 105 gpm after the first hour of pumping as the water level in the well declined. After three hours of pumping, the flow rate was recorded to be 103 gpm and DTW was 476.3 ft btoc. The test continued overnight with plant personnel managing the discharged groundwater.

INTERA personnel were on-site on January 19, 2024, to assess the status of the 24-hour pumping test. The pump ran overnight without issue. The flow rate had declined to 95 gpm by 12:00 and the DTW was 488.0 ft btoc. A groundwater sample was collected at 12:05 comprised of two (2) 250-mL plastic containers. The samples were collected from a valve located about five ft from the wellhead along the discharge line. Groundwater samples were delivered to DHL Analytical (DHL) in Round Rock, Texas for laboratory analysis. Plant personnel shut off the pump at approximately 14:50 and the pressure transducer was left downhole to record the water level recovery.

INTERA personnel arrived on-site to assess the water level recovery on January 22, 2024. The DTW was measured to be 435.3 ft btoc at 10:55, indicating that the groundwater level had recovered to over 90% of its pre-test level. The log on the pressure transducer was stopped and all test data were downloaded and archived. The pressure transducer was removed from the well and all field work was concluded.



### 3.0 Well Description

The well construction from the State of Texas Well Report (**Appendix A**) discussed in Section 1 is contradicted by the field observations discussed in Section 2. The State Well Report indicates a 2-ft casing stickup and a screened interval from 690 to 740 ft bgs (50-ft interval), coincident with a change in lithology from generally lime and shale to “water sand” and lime at about 690 ft bgs. However, field observations showed there is a 0.9-ft casing stickup, and the downhole camera survey indicated a screened interval from 660.5 to 717.6 ft bgs (57.1-ft interval). It is possible that the lower part of the well filled in with sediment, but the depth to the top of the slotted interval from the State Well Report seems to be an error. Review of the borehole camera survey recorded on December 21, 2023, did not reveal any clear evidence that the size, shape, or spacing of vertical slots above and below 690 ft are different from one another. The gamma log (**Appendix B**) shows somewhat of a leftward deflection at about 690 ft which could be interpreted as decreasing clay content and increasing sand content. This would be consistent with the transition in lithology reported at that depth in the State Well Report. However, we do not currently have an explanation for the discrepancy between the State Well Report and field observations. It should also be noted that the water level and well yield reported on the State Well Report also differ significantly from field observations (~130 ft lower water level with roughly half the originally reported yield). It appears the lithology from the State Well Report is correct but the depth and screened interval from the same report are incorrect. That said, in our experience it is not uncommon for there to be a discrepancy between what the driller reports on the Submitted Drillers Report and what is actually in the ground.

A borehole lithology and well completion diagram identifying the slotted intervals, casing and screen type and size, filter pack interval, cement interval, pump and motor, pump setting, column pipe type and size, and other information related to the well construction is given in **Figure 1**. This diagram includes lithology data from the State Well Report and the well construction observed in the borehole camera survey with the contradictory well construction information from the State Well Report noted. It is assumed on this diagram that the interval from 717.6 to 740 ft btoc is well casing that has been backfilled by sediment from the formation, but this has not been established. A pump curve for the permanent pump that is installed in the well is given in **Figure 2**.



## 4.0 Constant Rate Pumping Test

Groundwater level measurements and pumping rates recorded during the field activities discussed in Section 2 are plotted in **Figure 3**. This includes all data collected between January 11 and 22, 2024. A single manual water level measurement collected on January 11, 2024, was used to calibrate the groundwater level on the pressure transducer, which recorded all subsequent measurements. The pre-test water level on January 18, 2024, is somewhat shallower than the measurement from January 11, 2024, indicating that the well had fully recovered from earlier pumping prior to the January 18, 2024 test. Groundwater levels over the 24 hours preceding the commencement of pumping on January 18, 2024, had increased by 0.54 ft.

The pump was switched on for the nominal 24-hour constant rate test at 12:02 on January 18, 2024, with pumping rates declining somewhat as the groundwater level in the well declined, as discussed in Section 2. Both the pumping and recovery groundwater level data are very smooth and well-behaved throughout the period of record. The groundwater level was still declining slightly at the end of pumping at about 0.00209 ft/minute (0.025 in/minute) and, after pumping stopped, the groundwater level recovered slowly over a nearly 3-day period and had still not entirely recovered when the equipment was pulled from the well. The pumping and recovery data for this test are presented in **Figure 4**, and key information from this test is summarized below:

<u>Pre-test static water level (SWL):</u>	433.44 ft btoc (1/18/2024 12:02)
<u>Pumping duration:</u>	26 hr 28 min
<u>Pumping rates:</u>	Initially at 115 gpm, decreasing to 103 gpm over the next 3 hours. The next measurements starting ~22 hr 50 min after the start of pumping was at 95 gpm and remained there for the remainder of the test. A value of 95 gpm is used to calculate specific capacity and to estimate aquifer transmissivity.
<u>End-of-test pumping water level (PWL):</u>	488.45 ft btoc (1/19/2024 14:30)
<u>End-of-test drawdown:</u>	55.01 ft @ 95 gpm
<u>Specific capacity:</u>	1.7 gpm/ft @ 95 gpm for 26.5 hours
<u>Recovery:</u>	Just shy of 3 days' worth of very smooth recovery data. The last recorded measurement was 435.20 ft btoc (1/22/2024 11:00), which is ~1.8 ft shy of the initial SWL.

## 4.1 Aquifer Test Analysis

Drawdown over time at the Rockwool well was calculated as the difference between the pumping water levels (PWLs) and the pre-test static water level SWL. These drawdowns and their time-derivative are shown on the semi-log well response diagnostic plot given in the semi-log plot in **Figure 5**. Drawdowns



are shown in blue on the graph and their derivatives are shown in orange. This plot was made and the derivatives calculated using Bourdet smoothing in AQTESOLV aquifer test analysis software (Duffield, 2007). Drawdowns continue to increase throughout the entire pumping period and the roughly constant derivative is consistent with a Theis model (infinite two-dimensional confined aquifer; compare to Figure 2 of Renard et al., 2009). There was no indication of possible boundary or recharge effects during the pumping period.

No observation wells were used for this test. Analyses on pumped wells are less ideal than analyses conducted on observation well drawdowns because the drawdown in a pumped well is a combination of both the aquifer response to pumping and additional drawdown within the well due to frictional losses within the gravel pack and well screen. Additionally, the rate of propagation of the drawdown cone over time is unknown since there is no distance between the pumped well and itself. This makes any estimates of the aquifer storage coefficient, which strongly affects the rate of propagation of drawdown within an aquifer, invalid for analyses conducted on pumping well drawdowns. Given these limitations, only simple analyses are appropriate for pumping wells.

The time at which casing storage effects become negligible ( $t_c$ , minutes) was calculated using equation 16.13 from Driscoll (1986):

$$t_c = \frac{0.6(d_c^2 - d_p^2)}{Q/s}$$

where  $d_c$  is the inside diameter of the well casing in inches;

$d_p$  is the inside diameter of the pump column pipe in inches; and

$Q/s$  is the specific capacity of the well in gpm/ft at  $t_c$ .

For a 6-inch well with a 3-inch pump column pipe (as reported for the Rockwool well) and a specific capacity of 1.7 gpm/ft, the estimated time at which casing storage effects become negligible is approximately 9.5 minutes into pumping.

Drawdown is calculated as described above and water level recovery from pumping is calculated by taking the difference between observed water levels and a projected water level assuming that water levels would continue to decline along the same trend with continued pumping (slope calculated over log minutes). The drawdown and calculated recovery were used to estimate aquifer transmissivity using the Cooper-Jacob or Jacob straight-line method as described in Driscoll (1986) and Roscoe-Moss (1990). The data and analysis for the nominal 24-hour pumping test are shown on semi-log plots in **Figure 6**.

A straight line was able to be fit through the semi-log drawdown data for all times after about 10 minutes. The calculated recovery shows more recovery than actually observed in the field at later times due to the projection of the drawdown trend. The calculated recovery trend is taken to be the most representative aquifer properties between about 10 and 200 minutes after the cessation of pumping. The Cooper-Jacob lines are similar for both the pumping and recovery periods, with both showing a



head change per log cycle ( $\Delta s$ ) of about 12.5 ft. The formula for the straight-line method as given in Roscoe-Moss (1990) is simple:

$$T = \frac{264Q}{\Delta s}$$

where  $T$  is the calculate transmissivity in gpd/ft;

$Q$  is the pumping rate in gpm; and

$\Delta s$  is the difference in drawdown taken one log-cycle apart in feet.

The transmissivity is converted to units of ft<sup>2</sup>/day using the conversion 7.48052 gallons = 1 ft<sup>3</sup>. Using a nominal pumping rate of 95 gpm and the observed 12.5-ft head change over one log cycle or the Jacob straight-line, the estimated transmissivity from drawdowns in the pumping well is approximately 268 ft<sup>2</sup>/day.

Aquifer thickness data are unavailable, but the 57.1-ft screened interval of the well can be used as a reasonable proxy for the aquifer thickness if the well is assumed to be screened over the entire length of the confined aquifer. Under this assumed thickness, the hydraulic conductivity at the well location is estimated to be 4.7 ft/day. This is on the high end for consolidated sandstone or limestone or about mid-range for unconsolidated sand.





## 5.0 Groundwater Quality Analysis

A groundwater sample was collected from the Rockwool well near the end of the pumping period of the nominal 24-hour pumping test on January 19, 2024, as described in Section 2. The sample was promptly taken to DHL Analytical (a NELAP-accredited laboratory) in Round Rock, TX for laboratory analysis. The original laboratory report is included in **Appendix C** and the results are summarized in **Table 1**. Water quality is brackish at 1,810 mg/L of total dissolved solids (TDS).



## 6.0 Predicted Impacts of Proposed Production from the Well

Aquifer storativity cannot be correctly estimated on the basis of a single-well pumping test. At least one observation well is required to determine how quickly drawdown propagates through an aquifer, which is mainly affected by aquifer storage properties. It is not possible to predict the timing of drawdown at a distance from a pumping well without having an estimate of the aquifer storativity. Given the lack of site-specific estimates of the aquifer storativity at the location, the Texas Water Development Board's (TWDB's) Northern Trinity and Woodbine Groundwater Availability Model (NTWGAM; Kelley et al., 2014) was reviewed to estimate which aquifer/model layer the well is completed in and what value was used for the specific storage coefficient ( $S_s$ ) in the calibrated model.

Based on the approximate location and construction information from the well and the geologic structure data from the NTWGAM, the Rockwool well appears to be completed in either the lower Glen Rose (model layer 5) or the Hensell aquifer (model layer 6) with some ambiguity. The well is located in the NTWGAM model grid cell at Row 609, Column 230. The expected thickness of the Hensell is consistent with the length of the screened interval of the Rockwool well, and the estimated hydraulic conductivity of the Rockwool well is more consistent with the Hensell (3.9 ft/day) than the Glen Rose (0.8 ft/day) in the model. The specific storage coefficients of the Hensell ( $4.9\text{E-}05 \text{ ft}^{-1}$ ) and the Glen Rose ( $3.7\text{E-}05 \text{ ft}^{-1}$ ) do not greatly differ. For the purpose of predicting drawdown at distance from the Rockwool well, it is assumed that the well is completed in the Hensell aquifer with a transmissivity of  $268 \text{ ft}^2/\text{day}$  (estimated from single-well constant rate test) and a storativity of  $4.9\text{E-}05 \text{ ft}^{-1} \times 57.1 \text{ ft} = 0.0028$  (estimated using the NTGAM and assuming the well screen length equals the aquifer thickness).

Rockwool has requested up to 20 AFY of permitted withdrawal. Assuming continuous pumping over a year, the equivalent rates in gallons per minute is 12.39 gpm. Distance-drawdown curves were calculated using the Theis solution for confined aquifers in AQTESOLV (Duffield, 2007) for 1 day, 30 days, and 365 days of continuous pumping using transmissivity and storativity values of  $268 \text{ ft}^2/\text{day}$  and 0.0028, respectively, at this pumping rate. The distance-drawdown plot using these assumptions and parameters is given in **Figure 7** for distances out to 10,000 ft (~1.9 miles) from the Rockwool well.

As shown on this graph, the expected drawdown in the aquifer  $\frac{1}{2}$  mile (2,640 ft) from the pumping well is approximately 1.75 ft at one year of continuous pumping at 24.78 gpm.



## 7.0 Conclusions

This Well Completion Report (WCR) documents available historic and current information about the Rockwool well (CUWCD Well ID N3-23-013G) based on the original 1998 State Well Report and field activities conducted at the well in December 2023 and January 2024. Field activities included a borehole camera survey of the well, a gamma log of the well, a nominal 24-hour constant rate pumping test of the well, and sampling for water quality analyses. Data from the pumping test were analyzed to estimate aquifer transmissivity and aquifer storage properties were assumed based on values reported in the NTWGAM (Kelley et al., 2014) to estimate impacts of production from the well at proposed rates.

CUWCD's specific WCR requirements are addressed directly below:

1. The lithology log from the original 1998 State Well Report (**Appendix A**) is also included on the well completion diagram given in **Figure 1**.
2. Chip trays containing samples of the formation cuttings are not required by CUWCD because this is an existing well.
3. The gamma log survey measured by Geocam is included in **Appendix B** and the log is also shown on the well completion diagram given in **Figure 1**. The header does not include drilling fluid properties because this is an existing well.
4. The well completion diagram in **Figure 1** includes the open and cased intervals, the casing and screen type and size, the cement interval, and available information about the submersible pump in the well, including its setting, and column pipe material and size. Annular fill and filter pack material were not noted in the original 1998 State Well Report. There is some contradiction between the original and recent field observations. The top of the slotted interval is about 30 ft higher and the well is over 20 ft shallower than originally recorded. The depths may be inconsistent due to infilling of the lower portion of the well with formation material, but this has not been substantiated. It is also possible that the original well report is simply incorrect.
5. The pump curve for the 25-HP Franklin submersible pump installed in the well is given in **Figure 2**.
6. Data and analysis of the nominal 24-hour pumping test are discussed in Section 4 of this WCR. Analysis of the drawdown and its time derivative indicate that the well is completed in a confined aquifer showing Theis-like behavior. The Rockwool well had a specific capacity of 1.7 gpm/ft after approximately 26.5 hours of pumping at rates that had stabilized to 95 gpm by the end of the test. The aquifer transmissivity is 268 ft<sup>2</sup>/day, as estimated using the Cooper-Jacob straight-line method. Relevant plots include those given in **Figure 3** through **Figure 6**.
7. Water quality analyses were conducted by DHL Analytical of Round Rock, Texas, a NELAP certified laboratory. The original laboratory report is included in **Appendix C** and the results are summarized in **Table 1**. Water quality is brackish with a TDS concentration of 1,810 mg/L.



8. The predicted impacts of the proposed production from the Rockwool well are discussed in Section 6 and are best summarized by **Figure 7**. Based on the estimated transmissivity and the assumptions stated in this WCR (most importantly the estimated storativity based on the NTWGAM), the aquifer drawdowns at one year of pumping at a rate corresponding to 20 AFY of production is expected to be about 1.75 ft of drawdown at a distance  $\frac{1}{2}$  mile from the Rockwool well.



## 8.0 References Cited

Driscoll, F.G., 1986. *Groundwater and Wells, 2<sup>nd</sup> Edition*, Johnson Division, St. Paul, MN, 1089 p.

Duffield, G.M., 2007. *AQTESOLV for Windows Version 4.5 User's Guide*, HydroSOLVE, Inc., Reston, VA.

Kelley, V.A., J. Ewing, T.L. Jones, S.C. Young, N. Deeds, and S. Hamlin, 2014. *Updated Groundwater Availability Model of the Northern Trinity and Woodbine Aquifers*. Prepared for North Texas GCD, Northern Trinity GCD, Prairielands GCD, and Upper Trinity GCD, 990 p.

Renard, P., D. Glenz, and M. Mejias, 2009. Understanding diagnostic plots for well-test interpretation. *Hydrogeology Journal* 17, issue 3, pp. 589-600.

Roscoe-Moss Company, 1990. *Handbook of Groundwater Development*. John Wiley & Sons, Inc., 493 p.



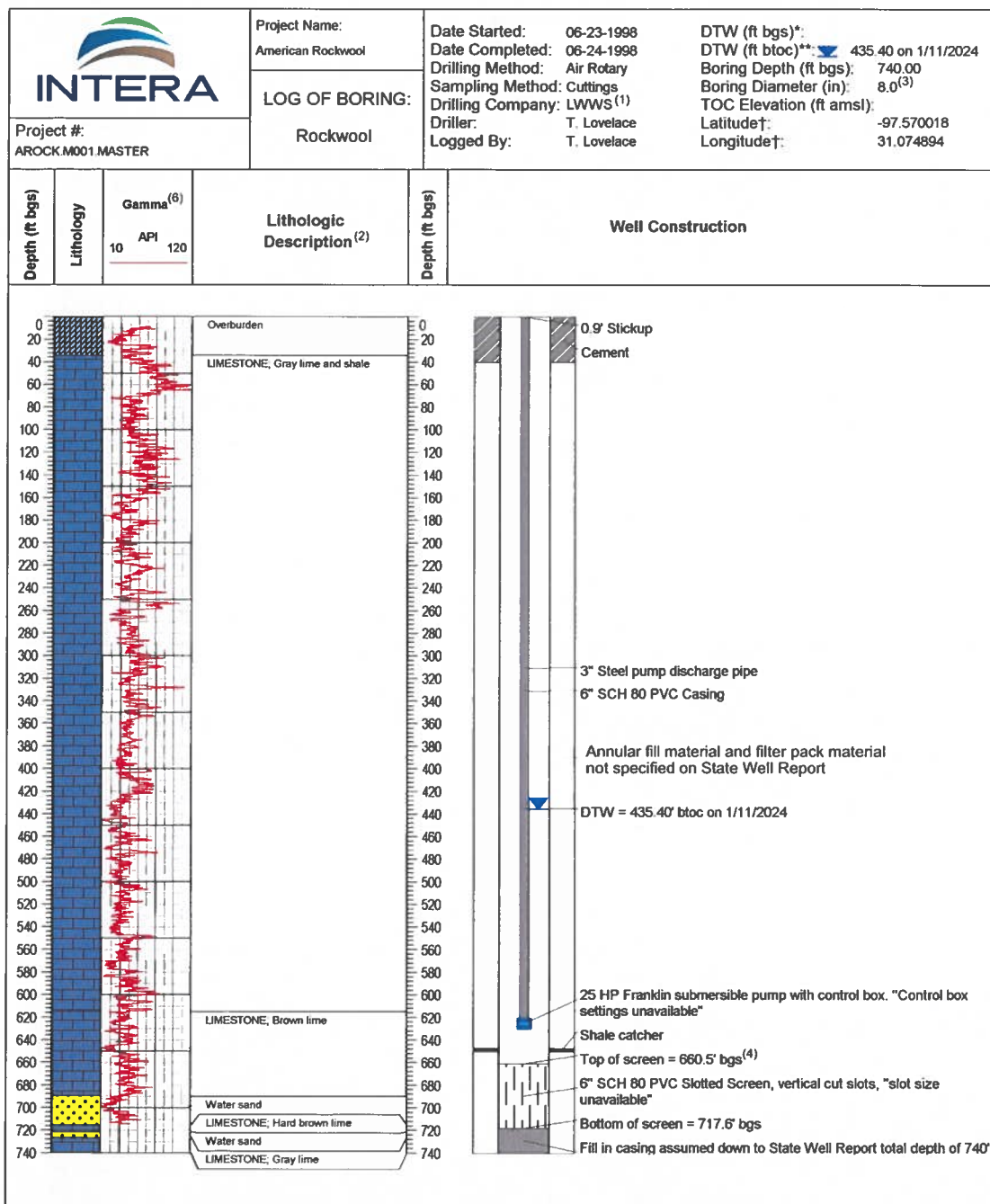
## FIGURES





Well Completion Report:  
N3-23-013G

Figures



Notes:

1. LWWS = Lovelace Water Well Service
2. Lithology pulled from State of Texas Well Report, June 1998
3. 12" Diameter hole from 0' to 40' bgs
4. State Well Report indicates top of slotted interval at 690 ft bgs. Recent camera survey shows the top of slots at 660.5 ft bgs.
5. ft = foot or feet, bgs = below ground surface, btoc = below top of casing, in = inches, mm = millimeters, DTW = depth to water, TOC = top of casing, amsl = above mean sea level
6. Gamma survey logged by Geocam on December 12, 2023.

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Figure 1. Well completion diagram based on the State Well Report and downhole camera survey.

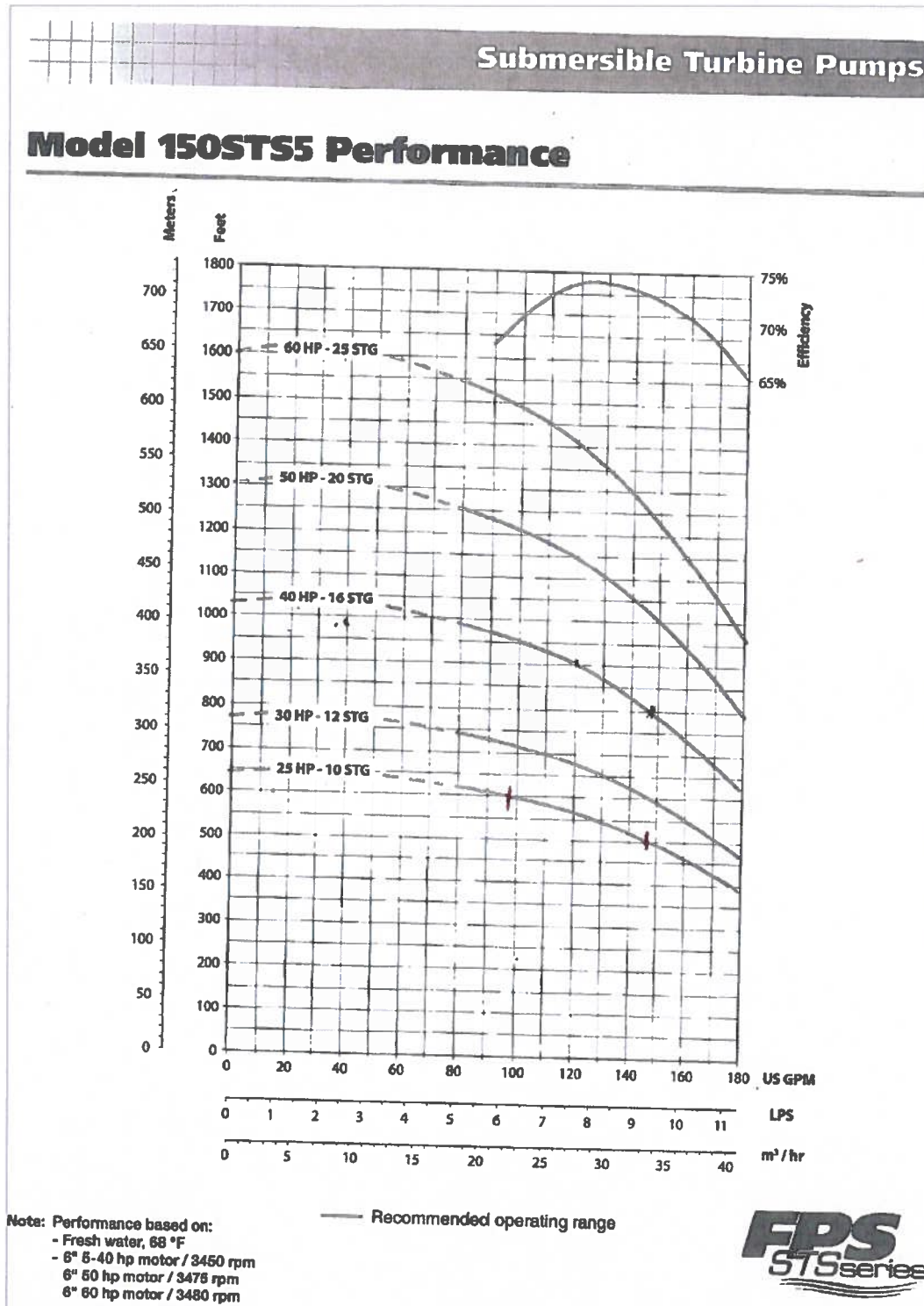


Figure 2. Pump curve for installed pump (25-hp, 10-stg).

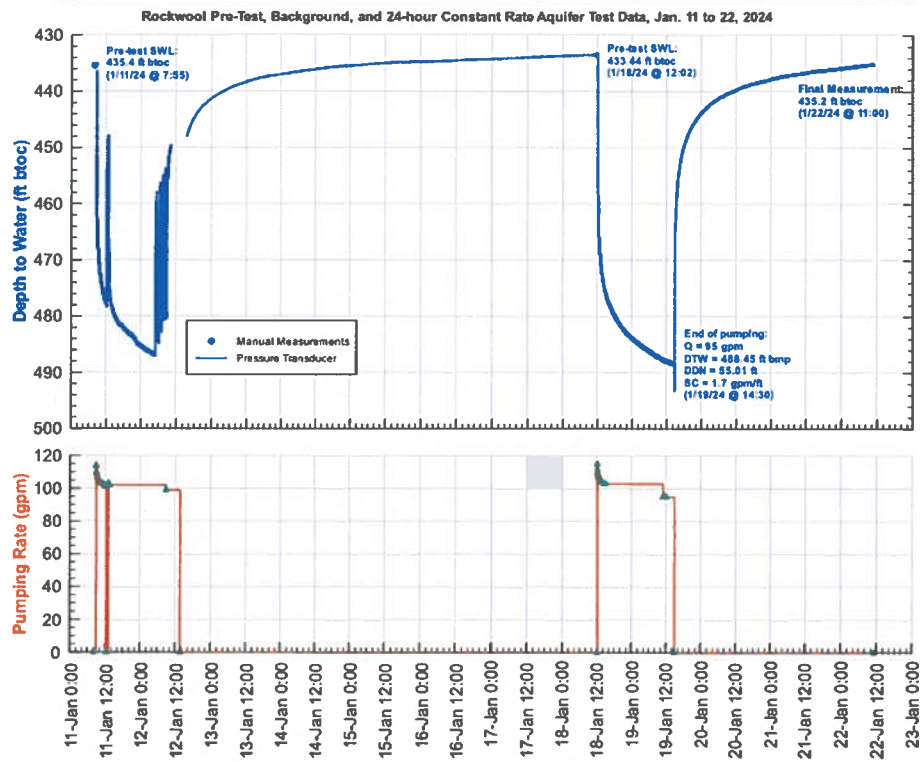


Figure 3. Water levels and pumping rates recorded between January 11 and 22, 2024 at the Rockwool well.

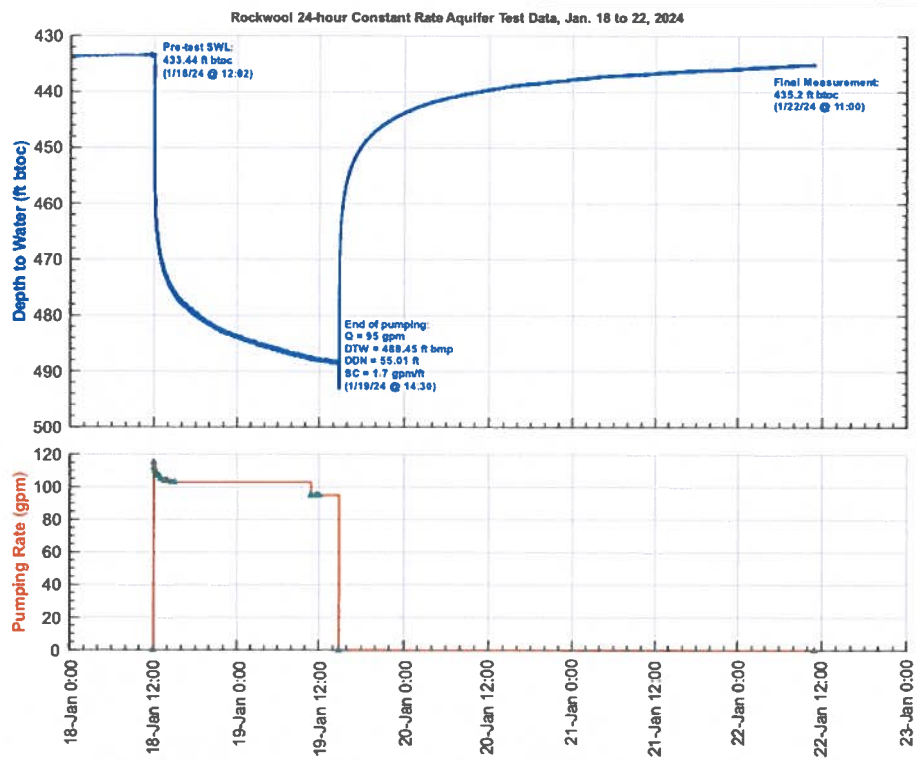


Figure 4. Water levels and pumping rates recorded during the pumping and recovery periods of the nominal 24-hour pumping test started on January 18, 2024.

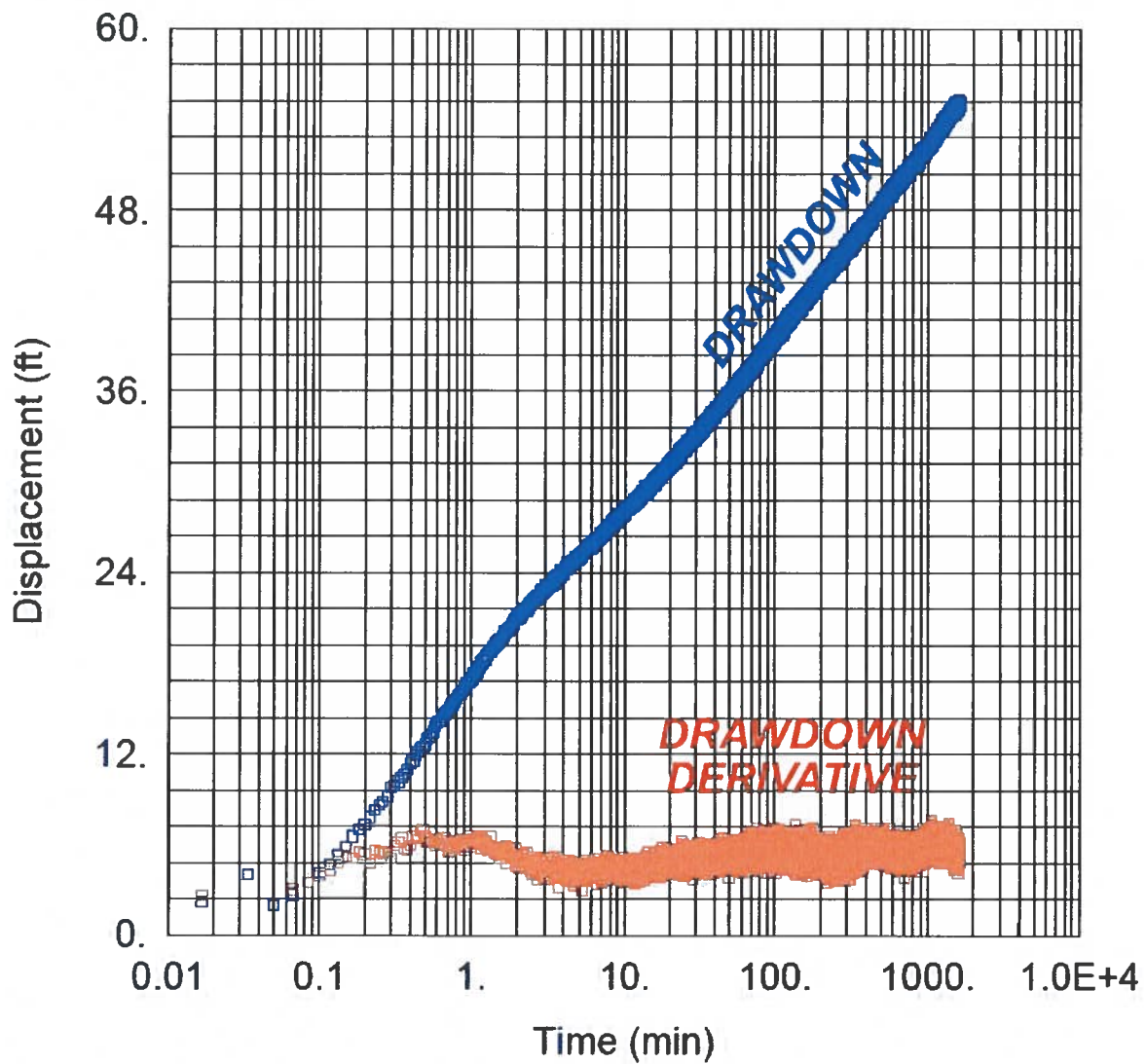


Figure 5. Diagnostic plot for pumping period drawdowns. The continually declining water levels (increased drawdown) and roughly constant time-derivative are characteristic of an infinite two-dimensional confined aquifer.

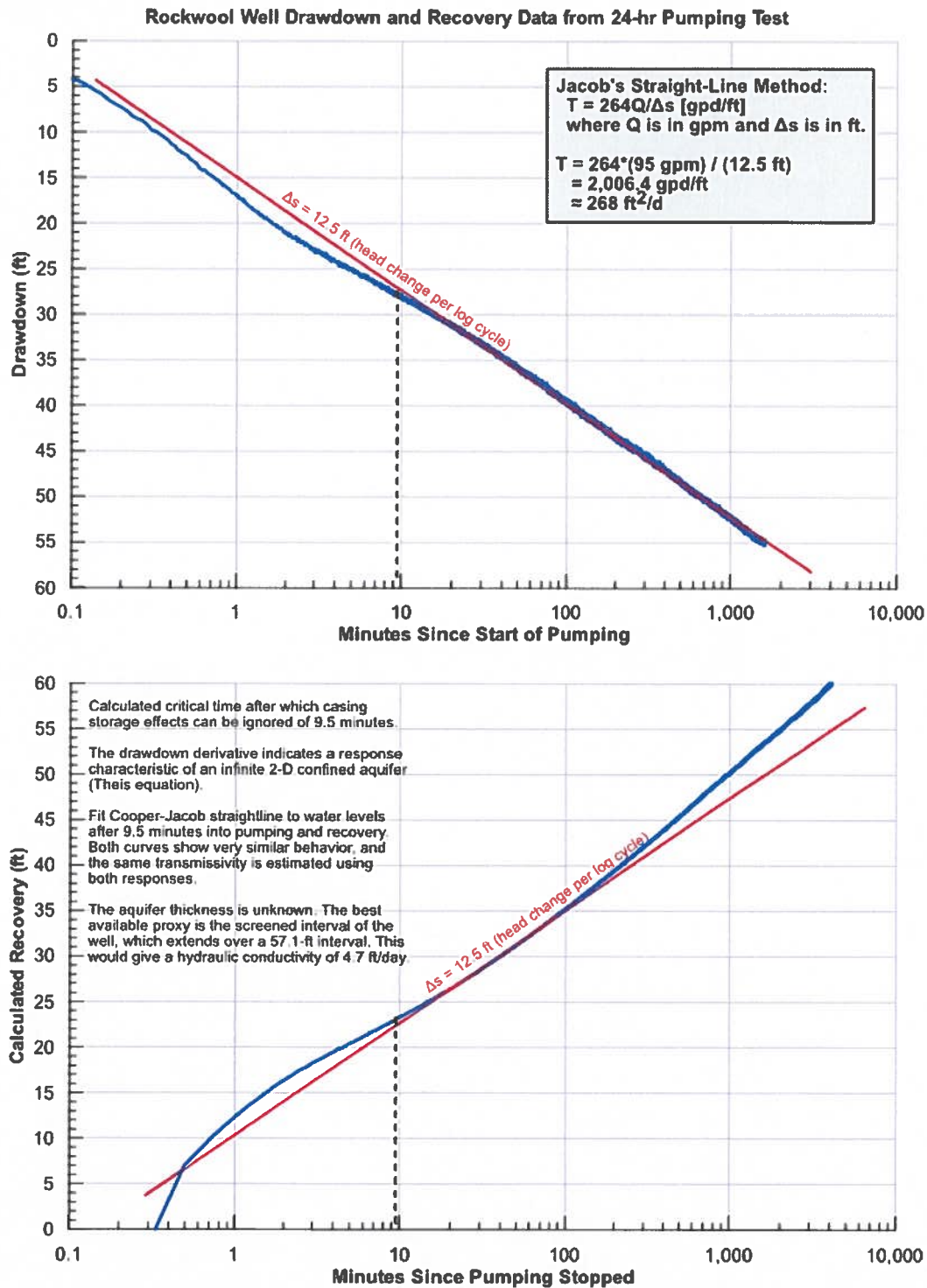


Figure 6. Cooper-Jacob analysis of drawdown and calculated recovery from the nominal 24-hour pumping test to estimate aquifer transmissivity.



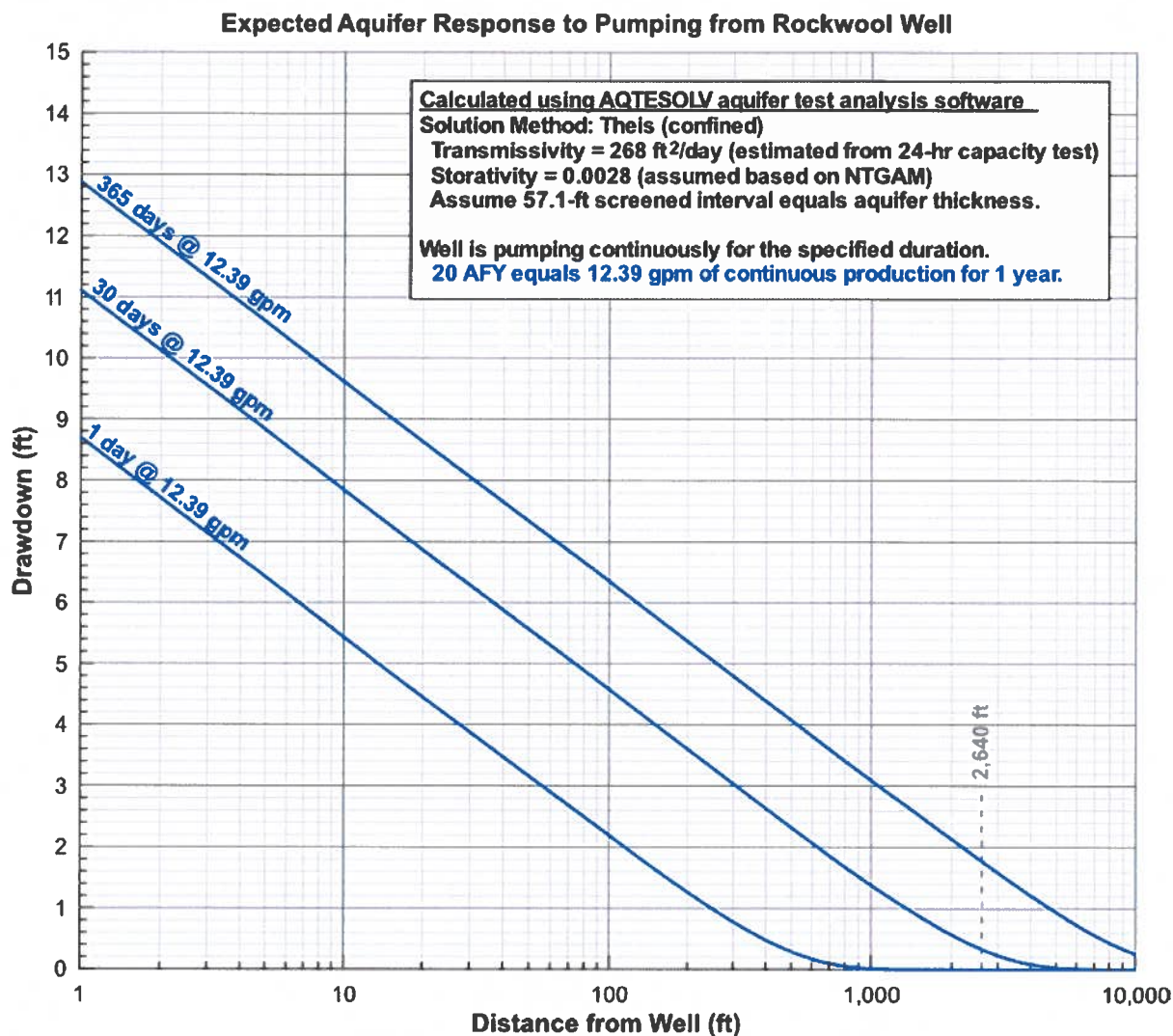


Figure 7. Calculated distance-drawdown plot for 1, 30, and 365 days of continuous pumping at rates corresponding to 20 AFY of groundwater withdrawal. This is calculated using the Theis solution for confined aquifers using the transmissivity estimated from the nominal 24-hour pumping test and an assumed storativity value.



## TABLES



Table 1. Water quality analytical results for a groundwater sample collected from the Rockwool well.

Parameter	Reported Value	Units	Primary/Secondary Drinking Water MCLs
Collection Date	1/19/24 12:05	--	
Alkalinity, Bicarbonate (As CaCO <sub>3</sub> )	439	mg/L*	NL
Alkalinity, Carbonate (As CaCO <sub>3</sub> )	<10.0	mg/L*	NL
Alkalinity, Hydroxide (As CaCO <sub>3</sub> )	<10.0	mg/L*	NL
Alkalinity, Total (As CaCO <sub>3</sub> )	439	mg/L*	NL
Calcium	24.2	mg/L	NL
Chloride	265	mg/L	250
Magnesium	16.0	mg/L	NL
Potassium	4.95	mg/L	NL
Dissolved Silica (As SiO <sub>2</sub> )	9.76 (N)	mg/L	NL
Sodium	686	mg/L	NL
Sulfate	628	mg/L	250
Total Dissolved Solids (Residue, Filterable)	1810	mg/L	500

Table notes:

MCLs Maximum Contaminant Levels  
NL Not Listed  
**Bold** Above Secondary MCL  
< Analyzed but not detected  
J Analyte detected between MDL and RL  
N Parameter not NELAP certified  
\* Alkalinity units are mg/L @ pH 4.54



Well Completion Report:  
N3-23-013G

Appendix A

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## APPENDIX A

State of Texas Well Report for CUWCD Well ID N3-23-013G

Send original copy by certified return receipt requested mail to: TNRCC, MC 177, P.O. Box 13087, Austin, TX 78711-3087

ATTENTION OWNER: Confidentiality  
Privilege Notice on on reverse side  
of Well Owner's copy (pink)

## State of Texas WELL REPORT

Texas Water Well Drillers Advisory Council  
MC 177  
P.O. Box 13087  
Austin, TX 78711-3087  
512-239-0530

1) OWNER American Rockwool Inc. ADDRESS P.O. Box C McAnville TX 76559  
(Name) (Street or RFD) (City) (State) (Zip)  
2) ADDRESS OF WELL: County Ort Patty Hamilton Rd McAnville TX 76559 GRID # 40-60-5  
(Street, RFD or other) (City) (State) (Zip)

3) TYPE OF WORK (Check):  
☒ New Well ☐ Deepening  
☐ Reconditioning ☐ Plugging  
4) PROPOSED USE (Check): ☐ Monitor ☐ Environmental Soil Boring ☐ Domestic  
☒ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell  
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No  
5) well  
6) WELL LOG:  
Date Drilling: 6-29-98  
Started 6-29-98  
Completed 6-29-98  
DIAMETER OF HOLE  
Dia. (in.) From (ft.) To (ft.)  
12 Surface 40  
8 40 740  
7) DRILLING METHOD (Check): ☐ Driven  
☒ Air Rotary ☐ Mud Rotary ☐ Bored  
☐ Air Hammer ☐ Cable Tool ☐ Jetted  
☐ Other

From (ft.)	To (ft.)	Description and color of formation material
0	34	overburden
34	615	gray lime & shale
615	690	brown lime
690	715	water sand
715	721	hard brown lime
721	726	water sand
726	740	gray lime

8) Borehole Completion (Check): ☐ Open Hole ☒ Straight Wall  
☐ Underreamed ☐ Gravel Packed ☐ Other  
If Gravel Packed give interval ... from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., If commercial	Setting (ft.)		Gage Casting Screen
			From	To	
8	N	Plastic-solid	42	40	
6	N	Plastic-solid	42	690	
6	N	Plastic-slotted	690	740	

9) CEMENTING DATA [Rule 338.44(1)]  
Cemented from 0 ft. to 40 ft. No. of sacks used 4  
ft. to \_\_\_\_\_ ft. No. of sacks used \_\_\_\_\_  
Method used sand tremie  
Cemented by Tommy Love  
Distance to septic system field lines or other concentrated contamination 740 ft.  
Method of verification of above distance measured

10) SURFACE COMPLETION  
☒ Specified Surface Slab Installed [Rule 338.44(2)(A)]  
☐ Specified Steel Sleeve Installed [Rule 338.44(3)(A)]  
☐ Pitless Adapter Used [Rule 338.44(3)(b)]  
☐ Approved Alternative Procedure Used [Rule 338.71]

11) WATER LEVEL:  
Static level 304 ft. below land surface Date 6-24-98  
Artesian flow \_\_\_\_\_ gpm. Date \_\_\_\_\_

12) PACKERS: Type Depth  
None

13) TYPE PUMP:  
☐ Turbine ☐ Jet ☒ Submersible ☐ Cylinder  
☐ Other \_\_\_\_\_  
Depth to pump bowls, cylinder, jet, etc., 525 ft.

14) WELL TESTS:  
Type test: ☐ Pump ☐ Bailor ☒ Jetted ☐ Estimated  
Yield: 200 gpm with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.

15) WATER QUALITY:  
Did you knowingly penetrate any strata which contained undesirable constituents?  
☐ Yes ☒ No If yes, submit "REPORT OF UNDESIRABLE WATER"  
Type of water? \_\_\_\_\_ Depth of strata \_\_\_\_\_  
Was a chemical analysis made? ☐ Yes ☒ No

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief. I understand that failure to complete items 1 thru 15 will result in the log(s) being returned for completion and resubmittal.

COMPANY NAME Tom Love Water Well Service WELL DRILLER'S LICENSE NO. 4920 WUPKL  
(Type or print)  
ADDRESS P.O. Box 2406 (City) Ort (State) TX (Zip) 76559  
(Street or RFD)  
(Signed) Tommy Love (Signed) \_\_\_\_\_ (Registered Driller/Trainee)  
(Licensed Well Driller)

Please attach electric log, chemical analysis, and other pertinent information, if available.



Well Completion Report:  
N3-23-013G

Appendix B

---

## APPENDIX B

### Downwell Gamma Log Survey





Borehole: WATER WELL 1

Logs: GAMMA, SPR

**Water Well Logging & Video Recording Services**

Geo Cam, Inc. 17118 Classen rd. San Antonio, TX 78247 877-495-9121

Project: WATER WELL 1 Date: 12/21/23

Client: INTERA, INC. County: BELL

Location: N 31° 04' 29.6" W 97° 34' 12.2" State: TX

**BOREHOLE DATA**

Drilling Contractor: INTERA, INC.

Driller T.D. (ft) : NA

Elevation: 584'

Logger T.D. (ft) : 718'

Depth Ref: T.C.

Date Drilled: NA

**BIT RECORD**

**CASING RECORD**

RUN	BIT SIZE (in)	FROM (ft)	TO (ft)	SIZE/WGT/THK	FROM (ft)	TO (ft)
1	NA			6" PVC	+0.9'	TD
2						
3						

Drill Method: NA

Weight:

Fluid Level (ft) : 433'

Hole Medium:

Mud Type:

Time Since Circ:

Viscosity:

Rm:

at:

Deg F

**GENERAL DATA**

Logged by: DAVID S.

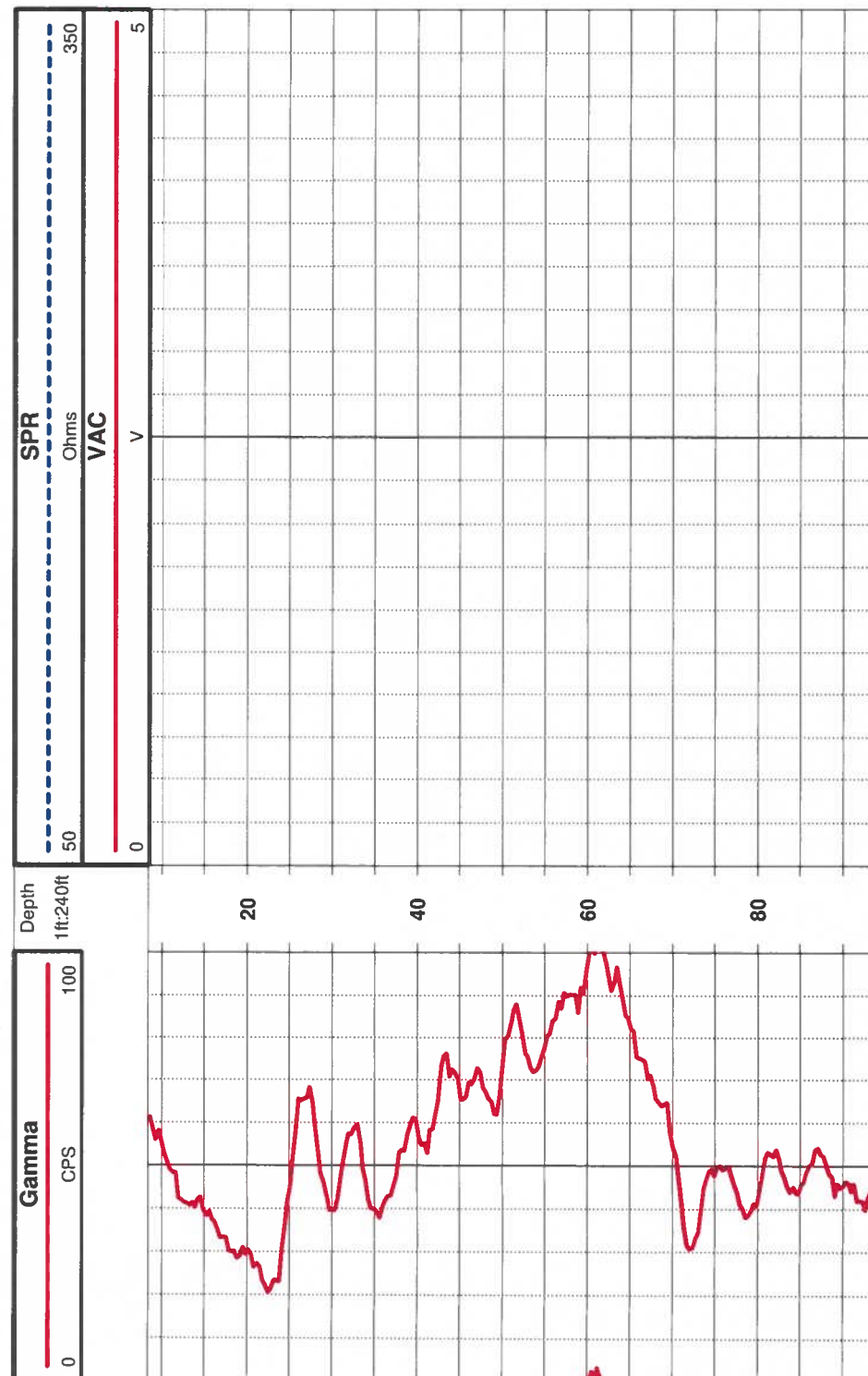
Unit/Truck: 11

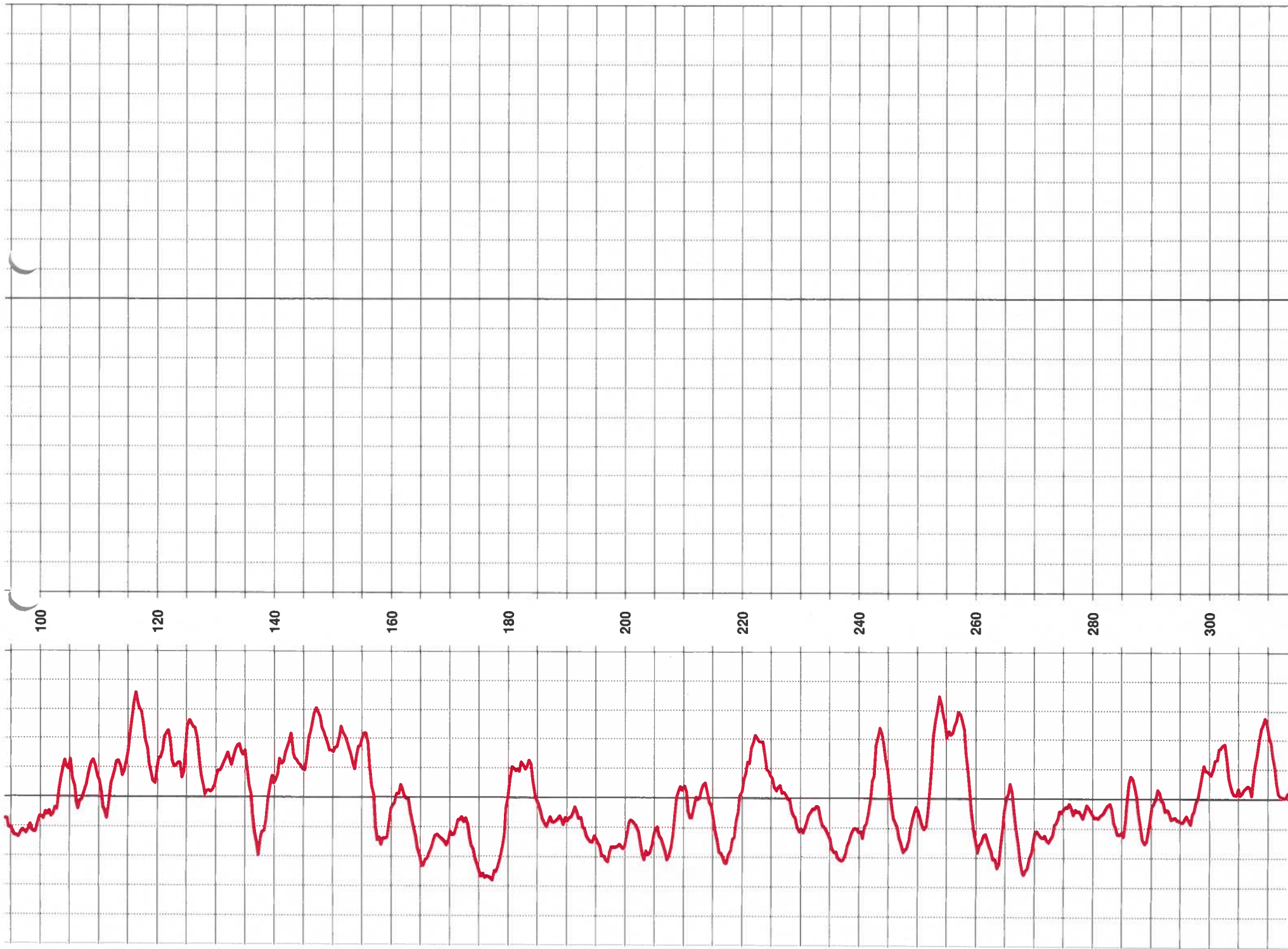
Witness:

LOG TYPE	RUN NO	SPEED (ft/min)	FROM (ft)	TO (ft)	FT./ IN.
GAMMA	2	21	714.4'	8.4'	20
SPR	1	35	650.0'	713.0'	20

Tool Serial No. LGR 6909

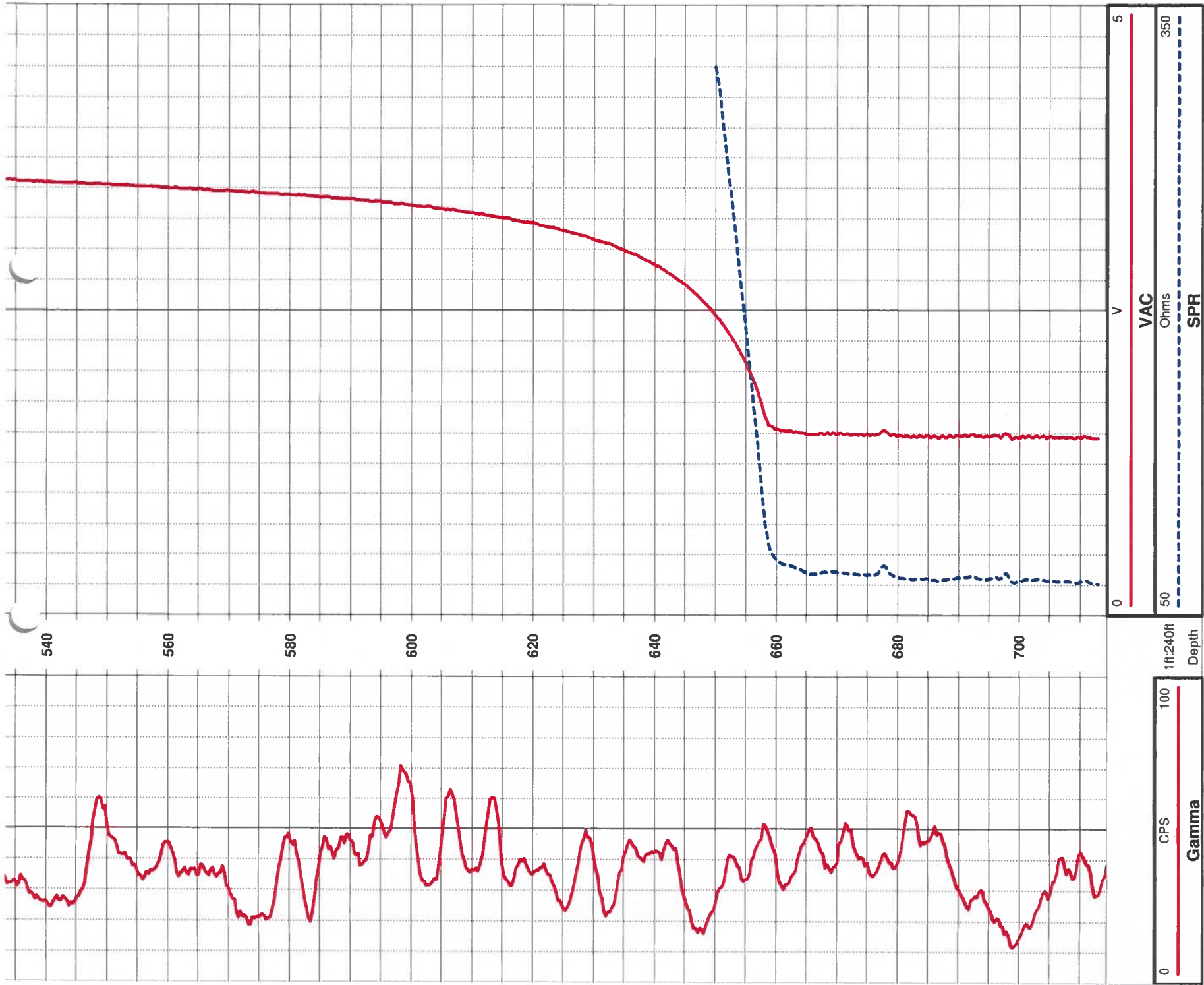
Comments: MEASUREMENTS WERE TAKEN FROM THE TOP OF CASING (+0.9').













## APPENDIX C

### DHL Analytical Laboratory Report for Groundwater Sample Collected from the Rockwool Well



January 26, 2024

Ed Hughes  
INTERA Inc.  
9600 Great Hills Trail #300W  
Austin, Texas 78759  
TEL: (512) 626-6924

FAX:

Order No.: 2401152

RE: American Rockwool

Dear Ed Hughes:

DHL Analytical, Inc. received 1 sample(s) on 1/19/2024 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAP except where noted in the Case Narrative. All non-NELAP methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

A handwritten signature in red ink, appearing to read "John DuPont".

John DuPont  
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification  
Number: T104704211-23-29





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2300 Double Creek Dr. Round Rock, TX 78664  
Phone 512.388.8222  
Web: [www.dhlanalytical.com](http://www.dhlanalytical.com)  
Email: [login@dhlanalytical.com](mailto:login@dhlanalytical.com)

## CHAIN-OF-CUSTODY

PAGE \_\_\_\_ OF \_\_\_\_

CLIENT: <u>INTERA Inc</u>		DATE: <u>1/19/2024</u>		LAB USE ONLY												
ADDRESS: <u>9600 Great H. Hwy Trail Suite 300W, Austin TX 78758</u>		PO#: <u>AROCK.MOCL.WELLREPORT</u>		DHL WORKORDER #: <u>2401152</u>												
PHONE: <u>678-4954152</u> EMAIL: <u>frank@intera.com</u>		PROJECT LOCATION OR NAME: <u>American Rockwood</u>														
DATA REPORTED TO: <u>Frank Roeder</u>		COLLECTOR: <u>Frank Roeder</u>														
ADDITIONAL REPORT COPIES TO: <u>Ed Hugus &amp; Hugus @ Inter</u>		CLIENT PROJECT #														
<div>Authorize 5% surcharge for TRRP report? <input type="checkbox"/> Yes <input type="checkbox"/> No</div> <div>Field Sample I.D.</div>		<div>W=WATER SE=SEDIMENT L=LIQUID P=PAINT S=SOIL SL=SLUDGE SO=SOLID</div> <div>Lab Use Only DHL Lab #</div>		<div>PRESERVATION HCL <input type="checkbox"/> H<sub>3</sub>PO<sub>4</sub> <input type="checkbox"/> HNO<sub>3</sub> <input type="checkbox"/> H<sub>2</sub>SO<sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/> Zn Acetate <input type="checkbox"/> ICE <input type="checkbox"/> UNPRESERVED <input checked="" type="checkbox"/></div> <div>ANALYSES BTEX <input type="checkbox"/> MTBE <input type="checkbox"/> (METHOD 8260) TPH 1005 <input type="checkbox"/> TPH 1006 <input type="checkbox"/> HMO 1006 <input type="checkbox"/> GRO 8045 <input type="checkbox"/> DRO 8045 <input type="checkbox"/> VOC 8260 <input type="checkbox"/> VOC 8261 <input type="checkbox"/> SVOC 8270 <input type="checkbox"/> SVOC 8261 <input type="checkbox"/> PAH 8270 <input type="checkbox"/> HMO 1006 <input type="checkbox"/> PEST 8270 <input type="checkbox"/> 625.1 <input type="checkbox"/> O-P PEST 8270 <input type="checkbox"/> PCB 8082 <input type="checkbox"/> PCB 8270 <input type="checkbox"/> PCB 8270 <input type="checkbox"/> 625.1 <input type="checkbox"/> HERB 8321 <input type="checkbox"/> T PHOS <input type="checkbox"/> AMMONIA <input type="checkbox"/> METALS 6020 <input type="checkbox"/> 200.8 <input type="checkbox"/> DISS. METALS <input type="checkbox"/> RODA 8 <input type="checkbox"/> TX11 <input type="checkbox"/> PHC HEX CHROM <input type="checkbox"/> ALUMINUM <input type="checkbox"/> CAD <input type="checkbox"/> ANIONS 300 <input type="checkbox"/> 3056 <input type="checkbox"/> TCP-SVOC <input type="checkbox"/> VOC <input type="checkbox"/> PEST <input type="checkbox"/> HERB <input type="checkbox"/> TCP-METALS <input type="checkbox"/> HERB 8 <input type="checkbox"/> TX-11 <input type="checkbox"/> PH <input type="checkbox"/> RO <input type="checkbox"/> IGN <input type="checkbox"/> DGAS <input type="checkbox"/> OIL/GREASE <input type="checkbox"/> TDS <input type="checkbox"/> TSS <input type="checkbox"/> % MOIST <input type="checkbox"/> CYANIDE <input type="checkbox"/></div>												
Rockwood		01	1/19/24	1205	Ag 2x M642	2	X	A								FIELD NOTES <u>Her Rock 5937</u>
Relinquished By: (Sign)		DATE/TIME		Received by:		TURN AROUND TIME (CALL FIRST FOR RUSH)		LAB USE ONLY								
Relinquished By: (Sign)		DATE/TIME		Received by:		RUSH-1 DAY <input type="checkbox"/> RUSH-2 DAY <input type="checkbox"/> RUSH-3 DAY <input type="checkbox"/> NORMAL <input checked="" type="checkbox"/> OTHER <input type="checkbox"/> DUE DATE		RECEIVING TEMP (°C): <u>1.7</u> IF >6°C, ARE SAMPLES ON ICE AND JUST COLLECTED? YES / NO CUSTODY SEALS ON ICE CHEST: <input type="checkbox"/> BROKEN <input type="checkbox"/> INTACT <input checked="" type="checkbox"/> NOT USED CARRIER: <input type="checkbox"/> LSO <input type="checkbox"/> FEDEX <input type="checkbox"/> UPS <input type="checkbox"/> COURIER <input checked="" type="checkbox"/> HAND DELIVERED								
Relinquished By: (Sign)		DATE/TIME		Received by:				THERMO #: <u>78</u>								

☐ DHL DISPOSAL @ \$10.00 each

# DHL Analytical, Inc.

## Sample Receipt Checklist

Client Name: INTERA Inc.

Date Received: 1/19/2024

Work Order Number: 2401152

Received by: EL

Checklist completed by:

  
Signature

1/19/2024

Date

Reviewed by:

  
Initials

1/19/2024

Date

Carrier name: Hand Delivered

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/> NA <input type="checkbox"/>
Water - pH<2 acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/> LOT # 13171
	Adjusted? <u>no</u>		Checked by <u>EL</u>
Water - pH>9 (S) or pH>10 (CN) acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/> LOT #
	Adjusted? _____		Checked by _____
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Cooler # 1

Temp °C 1.7

Seal Intact NP

Any No response must be detailed in the comments section below.

Client contacted: \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted: \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action: \_\_\_\_\_

**CLIENT:** INTERA Inc.  
**Project:** American Rockwool  
**Lab Order:** 2401152

**CASE NARRATIVE**

Sample was analyzed using the methods outlined in the following references:

Method SW6020B - Metals Analysis  
Method E300 - Anions Analysis  
Method M2320 B - Alkalinity Analysis  
Method HACH 8185 - Dissolved Silica Analysis (this parameter is not NELAP certified)  
Method M2540C - TDS Analysis

**LOG IN**

The sample was received and log-in performed on 1/19/24. A total of 1 sample was received. The sample arrived in good condition and was properly packaged. All method blanks, sample duplicates, laboratory spikes, and/or matrix spikes met quality assurance objectives.

**DHL Analytical, Inc.**

**Date:** 26-Jan-24

**CLIENT:** INTERA Inc.  
**Project:** American Rockwool  
**Lab Order:** 2401152

**Work Order Sample Summary**

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
2401152-01	Rockwool		01/19/24 12:05 PM	01/19/2024

DHL Analytical, Inc.

26-Jan-24

Lab Order: 2401152  
Client: INTERA Inc.  
Project: American Rockwool

## PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
2401152-01A	Rockwool	01/19/24 12:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/23/24 07:28 AM	113655
	Rockwool	01/19/24 12:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/23/24 07:28 AM	113655
2401152-01B	Rockwool	01/19/24 12:05 PM	Aqueous	M2320 B	Alkalinity Preparation	01/22/24 11:08 AM	113650
	Rockwool	01/19/24 12:05 PM	Aqueous	E300	Anion Preparation	01/22/24 09:37 AM	113646
	Rockwool	01/19/24 12:05 PM	Aqueous	E300	Anion Preparation	01/22/24 09:37 AM	113646
	Rockwool	01/19/24 12:05 PM	Aqueous	E300	Anion Preparation	01/22/24 09:37 AM	113646
	Rockwool	01/19/24 12:05 PM	Aqueous	HACH 8185	Silica Prep	01/23/24 02:00 PM	113675
	Rockwool	01/19/24 12:05 PM	Aqueous	M2540C	TDS Preparation	01/24/24 12:51 PM	113688



DHL Analytical, Inc.

26-Jan-24

Lab Order: 2401152  
Client: INTERA Inc.  
Project: American Rockwool

## ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
2401152-01A	Rockwool	Aqueous	SW6020B	Total Metals ICP-MS - Water	113655	50	01/23/24 03:55 PM	ICP-MS5_240123B
	Rockwool	Aqueous	SW6020B	Total Metals ICP-MS - Water	113655	1	01/23/24 02:56 PM	ICP-MS5_240123B
2401152-01B	Rockwool	Aqueous	M2320 B	Alkalinity	113650	1	01/22/24 01:33 PM	TITRATOR_240122C
	Rockwool	Aqueous	E300	Anions by IC method - Water	113646	1	01/22/24 05:47 PM	IC4_240122B
	Rockwool	Aqueous	E300	Anions by IC method - Water	113646	10	01/22/24 05:09 PM	IC4_240122B
	Rockwool	Aqueous	E300	Anions by IC method - Water	113646	100	01/22/24 03:53 PM	IC4_240122B
	Rockwool	Aqueous	HACH 8185	Dissolved Silica	113675	1	01/23/24 02:27 PM	UV/VIS_2_240123A
	Rockwool	Aqueous	M2540C	Total Dissolved Solids	113688	1	01/24/24 04:55 PM	WC_240124A

**DHL Analytical, Inc.**

Date: 26-Jan-24

<b>CLIENT:</b>	INTERA Inc.	<b>Client Sample ID:</b>	Rockwool
<b>Project:</b>	American Rockwool	<b>Lab ID:</b>	2401152-01
<b>Project No:</b>	AROCK.M001.WELLREPORT	<b>Collection Date:</b>	01/19/24 12:05 PM
<b>Lab Order:</b>	2401152	<b>Matrix:</b>	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>TOTAL METALS: ICP-MS - WATER</b>		<b>SW6020B</b>		Analyst: <b>SP</b>			
Calcium	24.2	0.100	0.300		mg/L	1	01/23/24 02:56 PM
Magnesium	16.0	0.100	0.300		mg/L	1	01/23/24 02:56 PM
Potassium	4.95	0.100	0.300		mg/L	1	01/23/24 02:56 PM
Sodium	686	5.00	15.0		mg/L	50	01/23/24 03:55 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>RA</b>			
Chloride	265	3.00	10.0		mg/L	10	01/22/24 05:09 PM
Sulfate	628	10.0	30.0		mg/L	10	01/22/24 05:09 PM
<b>ALKALINITY</b>		<b>M2320 B</b>		Analyst: <b>KES</b>			
Alkalinity, Bicarbonate (As CaCO3)	439	10.0	20.0		mg/L @ pH 4.54	1	01/22/24 01:33 PM
Alkalinity, Carbonate (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.54	1	01/22/24 01:33 PM
Alkalinity, Hydroxide (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.54	1	01/22/24 01:33 PM
Alkalinity, Total (As CaCO3)	439	10.0	20.0		mg/L @ pH 4.54	1	01/22/24 01:33 PM
<b>DISSOLVED SILICA</b>		<b>HACH 8185</b>		Analyst: <b>KES</b>			
Silica, Dissolved (as SiO2)	9.76	1.00	1.00	N	mg/L	1	01/23/24 02:27 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>JS</b>			
Total Dissolved Solids (Residue, Filterable)	1810	50.0	50.0		mg/L	1	01/24/24 04:55 PM

<b>Qualifiers:</b>	*	Value exceeds TCLP Maximum Concentration Level	C	Sample Result or QC discussed in the Case Narrative
	DF	Dilution Factor	E	TPH pattern not Gas or Diesel Range Pattern
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	RL	Reporting Limit
	S	Spike Recovery outside control limits	N	Parameter not NELAP certified

CLIENT: INTERA Inc.

Work Order: 2401152

Project: American Rockwool

## ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5\_240123B

The QC data in batch 113655 applies to the following samples: 2401152-01A

Sample ID: <b>MB-113655</b>	Batch ID: <b>113655</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS5_240123B</b>	Analysis Date: <b>1/23/2024 2:38:00 PM</b>	Prep Date: <b>1/23/2024</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	<0.100	0.300								
Magnesium	<0.100	0.300								
Potassium	<0.100	0.300								
Sodium	<0.100	0.300								

Sample ID: <b>LCS-113655</b>	Batch ID: <b>113655</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>ICP-MS5_240123B</b>	Analysis Date: <b>1/23/2024 2:41:00 PM</b>	Prep Date: <b>1/23/2024</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.85	0.300	5.00	0	97.1	80	120			
Magnesium	5.46	0.300	5.00	0	109	80	120			
Potassium	5.13	0.300	5.00	0	103	80	120			
Sodium	5.57	0.300	5.00	0	111	80	120			

Sample ID: <b>LCSD-113655</b>	Batch ID: <b>113655</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS5_240123B</b>	Analysis Date: <b>1/23/2024 2:43:00 PM</b>	Prep Date: <b>1/23/2024</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.81	0.300	5.00	0	96.1	80	120	0.986	15	
Magnesium	5.39	0.300	5.00	0	108	80	120	1.32	15	
Potassium	5.07	0.300	5.00	0	101	80	120	1.13	15	
Sodium	5.53	0.300	5.00	0	111	80	120	0.598	15	

Sample ID: <b>2401123-13B SD</b>	Batch ID: <b>113655</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>ICP-MS5_240123B</b>	Analysis Date: <b>1/23/2024 2:51:00 PM</b>	Prep Date: <b>1/23/2024</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	3.76	1.50	0	3.76				0.074	20	
Magnesium	2.02	1.50	0	1.99				1.53	20	
Potassium	5.87	1.50	0	5.85				0.223	20	
Sodium	4.46	1.50	0	4.47				0.323	20	

Sample ID: <b>2401123-13B PDS</b>	Batch ID: <b>113655</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS5_240123B</b>	Analysis Date: <b>1/23/2024 3:17:00 PM</b>	Prep Date: <b>1/23/2024</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	8.46	0.300	5.00	3.76	94.1	75	125			
Magnesium	7.30	0.300	5.00	1.99	106	75	125			
Potassium	10.4	0.300	5.00	5.85	91.4	75	125			

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- J Analyte detected between MDL and RL
- ND Not Detected at the Method Detection Limit
- RL Reporting Limit
- J Analyte detected between SDL and RL

- DF Dilution Factor
- MDL Method Detection Limit
- R RPD outside accepted control limits
- S Spike Recovery outside control limits
- N Parameter not NELAP certified

CLIENT: INTERA Inc.

Work Order: 2401152

Project: American Rockwool

## ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5\_240123B

Sample ID: 2401123-13B PDS		Batch ID: 113655		TestNo: SW6020B		Units: mg/L				
SampType: PDS		Run ID: ICP-MS5_240123B		Analysis Date: 1/23/2024 3:17:00 PM		Prep Date: 1/23/2024				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Sample ID: 2401123-13B MS	Batch ID: 113655	TestNo: SW6020B	Units: mg/L							
SampType: MS	Run ID: ICP-MS5_240123B	Analysis Date: 1/23/2024 3:19:00 PM	Prep Date: 1/23/2024							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	8.57	0.300	5.00	3.76	96.3	75	125			
Magnesium	7.45	0.300	5.00	1.99	109	75	125			
Potassium	10.9	0.300	5.00	5.85	100	75	125			
Sodium	9.98	0.300	5.00	4.47	110	75	125			

Sample ID: 2401123-13B MSD	Batch ID: 113655	TestNo: SW6020B	Units: mg/L							
SampType: MSD	Run ID: ICP-MS5_240123B	Analysis Date: 1/23/2024 3:22:00 PM	Prep Date: 1/23/2024							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	8.60	0.300	5.00	3.76	96.8	75	125	0.269	15	
Magnesium	7.46	0.300	5.00	1.99	109	75	125	0.102	15	
Potassium	10.9	0.300	5.00	5.85	101	75	125	0.374	15	
Sodium	10.0	0.300	5.00	4.47	111	75	125	0.272	15	

**Qualifiers:** B Analyte detected in the associated Method Blank  
J Analyte detected between MDL and RL  
ND Not Detected at the Method Detection Limit  
RL Reporting Limit  
J Analyte detected between SDL and RL

DF Dilution Factor  
MDL Method Detection Limit  
R RPD outside accepted control limits  
S Spike Recovery outside control limits  
N Parameter not NELAP certified

**CLIENT:** INTERA Inc.  
**Work Order:** 2401152  
**Project:** American Rockwool

## ANALYTICAL QC SUMMARY REPORT

**RunID:** ICP-MS5\_240123B

Sample ID: <b>ICV-240123</b>	Batch ID: <b>R131040</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>ICP-MS5_240123B</b>	Analysis Date: <b>1/23/2024 10:10:00 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	2.32	0.300	2.50	0	92.6	90	110			
Magnesium	2.41	0.300	2.50	0	96.2	90	110			
Potassium	2.32	0.300	2.50	0	92.9	90	110			
Sodium	2.40	0.300	2.50	0	96.0	90	110			

Sample ID: <b>LCVL-240123</b>	Batch ID: <b>R131040</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS5_240123B</b>	Analysis Date: <b>1/23/2024 10:15:00 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0954	0.300	0.100	0	95.4	80	120			
Magnesium	0.110	0.300	0.100	0	110	80	120			
Potassium	0.107	0.300	0.100	0	107	80	120			
Sodium	0.105	0.300	0.100	0	105	80	120			

Sample ID: <b>CCV5-240123</b>	Batch ID: <b>R131040</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS5_240123B</b>	Analysis Date: <b>1/23/2024 1:28:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.63	0.300	5.00	0	92.6	90	110			
Magnesium	5.15	0.300	5.00	0	103	90	110			
Potassium	4.88	0.300	5.00	0	97.6	90	110			
Sodium	5.39	0.300	5.00	0	108	90	110			

Sample ID: <b>CCV6-240123</b>	Batch ID: <b>R131040</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS5_240123B</b>	Analysis Date: <b>1/23/2024 3:25:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.73	0.300	5.00	0	94.5	90	110			
Magnesium	5.24	0.300	5.00	0	105	90	110			
Potassium	4.92	0.300	5.00	0	98.5	90	110			
Sodium	5.45	0.300	5.00	0	109	90	110			

Sample ID: <b>CCV7-240123</b>	Batch ID: <b>R131040</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS5_240123B</b>	Analysis Date: <b>1/23/2024 3:58:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	5.44	0.300	5.00	0	109	90	110			

**Qualifiers:** B Analyte detected in the associated Method Blank  
J Analyte detected between MDL and RL  
ND Not Detected at the Method Detection Limit  
RL Reporting Limit  
J Analyte detected between SDL and RL  
DF Dilution Factor  
MDL Method Detection Limit  
R RPD outside accepted control limits  
S Spike Recovery outside control limits  
N Parameter not NELAP certified

CLIENT: INTERA Inc.

Work Order: 2401152

Project: American Rockwool

## ANALYTICAL QC SUMMARY REPORT

RunID: IC4\_240122B

The QC data in batch 113646 applies to the following samples: 2401152-01B

Sample ID: MB-113646	Batch ID: 113646	TestNo: E300	Units: mg/L							
SampType: MBLK	Run ID: IC4_240122B	Analysis Date: 1/22/2024 11:27:04 AM	Prep Date: 1/22/2024							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	<0.300	1.00								
Sulfate	<1.00	3.00								

Sample ID: LCS-113646	Batch ID: 113646	TestNo: E300	Units: mg/L							
SampType: LCS	Run ID: IC4_240122B	Analysis Date: 1/22/2024 11:46:04 AM	Prep Date: 1/22/2024							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.1	1.00	10.00	0	101	90	110			
Sulfate	29.8	3.00	30.00	0	99.5	90	110			

Sample ID: <b>LCSD-113646</b>	Batch ID: <b>113646</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>LCSD</b>	Run ID: <b>IC4_240122B</b>	Analysis Date: <b>1/22/2024 12:05:04 PM</b>	Prep Date: <b>1/22/2024</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.1	1.00	10.00	0	101	90	110	0.117	20	
Sulfate	29.9	3.00	30.00	0	99.6	90	110	0.106	20	

Sample ID: 2401152-01BMS	Batch ID: 113646	TestNo: E300	Units: mg/L							
SampType: MS	Run ID: IC4_240122B	Analysis Date: 1/22/2024 4:12:51 PM	Prep Date: 1/22/2024							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2330	100	2000	247.3	104	90	110			
Sulfate	2570	300	2000	590.0	98.8	90	110			

Sample ID: 2401152-01BMSD	Batch ID: 113646	TestNo: E300	Units: mg/L							
SampType: MSD	Run ID: IC4_240122B	Analysis Date: 1/22/2024 4:31:51 PM	Prep Date: 1/22/2024							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2330	100	2000	247.3	104	90	110	0.073	20	
Sulfate	2570	300	2000	590.0	99.0	90	110	0.105	20	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- J Analyte detected between MDL and RL
- ND Not Detected at the Method Detection Limit
- RL Reporting Limit
- J Analyte detected between SDL and RL

- DF Dilution Factor
- MDL Method Detection Limit
- R RPD outside accepted control limits
- S Spike Recovery outside control limits
- N Parameter not NELAP certified



CLIENT: INTERA Inc.

Work Order: 2401152

Project: American Rockwool

## ANALYTICAL QC SUMMARY REPORT

RunID: IC4\_240122B

Sample ID: <b>ICV-240122</b>	Batch ID: <b>R131023</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>IC4_240122B</b>	Analysis Date: <b>1/22/2024 10:49:04 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride 25.5 1.00 25.00 0 102 90 110

Sulfate 75.9 3.00 75.00 0 101 90 110

Sample ID: <b>CCV1-240122</b>	Batch ID: <b>R131023</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>IC4_240122B</b>	Analysis Date: <b>1/22/2024 7:03:51 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride 10.1 1.00 10.00 0 101 90 110

Sulfate 30.1 3.00 30.00 0 100 90 110

**Qualifiers:** B Analyte detected in the associated Method Blank  
J Analyte detected between MDL and RL  
ND Not Detected at the Method Detection Limit  
RL Reporting Limit  
J Analyte detected between SDL and RL

DF Dilution Factor  
MDL Method Detection Limit  
R RPD outside accepted control limits  
S Spike Recovery outside control limits  
N Parameter not NELAP certified

CLIENT: INTERA Inc.

Work Order: 2401152

Project: American Rockwool

## ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR\_240122C

The QC data in batch 113650 applies to the following samples: 2401152-01B

Sample ID: MB-113650	Batch ID: 113650	TestNo: M2320 B	Units: mg/L @ pH 4.51
SampType: MBLK	Run ID: TITRATOR_240122C	Analysis Date: 1/22/2024 11:54:00 AM	Prep Date: 1/22/2024

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	<10.0	20.0								
Alkalinity, Carbonate (As CaCO3)	<10.0	20.0								
Alkalinity, Hydroxide (As CaCO3)	<10.0	20.0								
Alkalinity, Total (As CaCO3)	<10.0	20.0								

Sample ID: LCS-113650	Batch ID: 113650	TestNo: M2320 B	Units: mg/L @ pH 4.53
SampType: LCS	Run ID: TITRATOR_240122C	Analysis Date: 1/22/2024 11:59:00 AM	Prep Date: 1/22/2024

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	48.2	20.0	50.00	0	96.3	74	129			

Sample ID: LCSD-113650	Batch ID: 113650	TestNo: M2320 B	Units: mg/L @ pH 4.53
SampType: LCSD	Run ID: TITRATOR_240122C	Analysis Date: 1/22/2024 12:05:00 PM	Prep Date: 1/22/2024

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	48.3	20.0	50.00	0	96.6	74	129	0.332	20	

Sample ID: 2401152-01B-DUP	Batch ID: 113650	TestNo: M2320 B	Units: mg/L @ pH 4.54
SampType: DUP	Run ID: TITRATOR_240122C	Analysis Date: 1/22/2024 1:50:00 PM	Prep Date: 1/22/2024

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	424	20.0	0	438.6				3.27	20	
Alkalinity, Carbonate (As CaCO3)	<10.0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	<10.0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	424	20.0	0	438.6				3.27	20	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- J Analyte detected between MDL and RL
- ND Not Detected at the Method Detection Limit
- RL Reporting Limit
- J Analyte detected between SDL and RL

- DF Dilution Factor
- MDL Method Detection Limit
- R RPD outside accepted control limits
- S Spike Recovery outside control limits
- N Parameter not NELAP certified

CLIENT: INTERA Inc.

Work Order: 2401152

Project: American Rockwool

## ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR\_240122C

Sample ID: <b>ICV1-240122</b>	Batch ID: <b>R131016</b>	TestNo: <b>M2320 B</b>	Units: <b>mg/L @ pH 4.52</b>							
SampType: <b>ICV</b>	Run ID: <b>TITRATOR_240122C</b>	Analysis Date: <b>1/22/2024 11:51:00 AM</b>	Prep Date: <b>1/22/2024</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Alkalinity, Bicarbonate (As CaCO3)	8.96	20.0	0							
Alkalinity, Carbonate (As CaCO3)	89.3	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	<10.0	20.0	0							
Alkalinity, Total (As CaCO3)	98.2	20.0	100.0	0	98.2	98	102			

Sample ID: CCV1-240122	Batch ID: R131016	TestNo: M2320 B	Units: mg/L @ pH 4.54							
SampType: CCV	Run ID: TITRATOR_240122C	Analysis Date: 1/22/2024 2:19:00 PM	Prep Date: 1/22/2024							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Alkalinity, Bicarbonate (As CaCO3)	8.88	20.0	0							
Alkalinity, Carbonate (As CaCO3)	90.9	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	<10.0	20.0	0							
Alkalinity, Total (As CaCO3)	99.8	20.0	100.0	0	99.8	90	110			

**Qualifiers:** B Analyte detected in the associated Method Blank  
J Analyte detected between MDL and RL  
ND Not Detected at the Method Detection Limit  
RL Reporting Limit  
J Analyte detected between SDL and RL

DF Dilution Factor  
MDL Method Detection Limit  
R RPD outside accepted control limits  
S Spike Recovery outside control limits  
N Parameter not NELAP certified

CLIENT: INTERA Inc.

Work Order: 2401152

Project: American Rockwool

## ANALYTICAL QC SUMMARY REPORT

RunID: UV/VIS\_2\_240123A

The QC data in batch 113675 applies to the following samples: 2401152-01B

Sample ID: MB-113675	Batch ID: 113675	TestNo: HACH 8185	Units: mg/L
SampType: MBLK	Run ID: UV/VIS_2_240123A	Analysis Date: 1/23/2024 2:10:00 PM	Prep Date: 1/23/2024

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silica, Dissolved (as SiO2)	<1.00	1.00								N

Sample ID: LCS-113675	Batch ID: 113675	TestNo: HACH 8185	Units: mg/L
SampType: LCS	Run ID: UV/VIS_2_240123A	Analysis Date: 1/23/2024 2:11:00 PM	Prep Date: 1/23/2024

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silica, Dissolved (as SiO2)	22.4	1.00	25.00	0	89.5	80	120			N

Sample ID: LCSD-113675	Batch ID: 113675	TestNo: HACH 8185	Units: mg/L
SampType: LCSD	Run ID: UV/VIS_2_240123A	Analysis Date: 1/23/2024 2:11:00 PM	Prep Date: 1/23/2024

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silica, Dissolved (as SiO2)	23.0	1.00	25.00	0	91.9	80	120	2.69	20	N

Sample ID: 2401152-01BMS	Batch ID: 113675	TestNo: HACH 8185	Units: mg/L
SampType: MS	Run ID: UV/VIS_2_240123A	Analysis Date: 1/23/2024 2:28:00 PM	Prep Date: 1/23/2024

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silica, Dissolved (as SiO2)	33.6	1.00	25.00	9.760	95.5	80	120			N

Sample ID: 2401152-01BMSD	Batch ID: 113675	TestNo: HACH 8185	Units: mg/L
SampType: MSD	Run ID: UV/VIS_2_240123A	Analysis Date: 1/23/2024 2:28:00 PM	Prep Date: 1/23/2024

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silica, Dissolved (as SiO2)	33.3	1.00	25.00	9.760	94.0	80	120	1.11	20	N

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- J Analyte detected between MDL and RL
- ND Not Detected at the Method Detection Limit
- RL Reporting Limit
- J Analyte detected between SDL and RL

- DF Dilution Factor
- MDL Method Detection Limit
- R RPD outside accepted control limits
- S Spike Recovery outside control limits
- N Parameter not NELAP certified

CLIENT: INTERA Inc.

Work Order: 2401152

Project: American Rockwool

## ANALYTICAL QC SUMMARY REPORT

RunID: UV/VIS\_2\_240123A

Sample ID: <b>ICV-240108</b>	Batch ID: <b>R131037</b>	TestNo: <b>HACH 8185</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>UV/VIS_2_240123A</b>	Analysis Date: <b>1/23/2024 2:09:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Silica, Dissolved (as SiO2)	44.6	1.00	50.00	0	89.2	85	115			N
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Sample ID: <b>CCV-240108</b>	Batch ID: <b>R131037</b>	TestNo: <b>HACH 8185</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>UV/VIS_2_240123A</b>	Analysis Date: <b>1/23/2024 2:29:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Silica, Dissolved (as SiO2)	23.5	1.00	25.00	0	93.8	85	115			N
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**Qualifiers:**

- B Analyte detected in the associated Method Blank
- J Analyte detected between MDL and RL
- ND Not Detected at the Method Detection Limit
- RL Reporting Limit
- J Analyte detected between SDL and RL

- DF Dilution Factor
- MDL Method Detection Limit
- R RPD outside accepted control limits
- S Spike Recovery outside control limits
- N Parameter not NELAP certified

Page 9 of 10

CLIENT: INTERA Inc.

Work Order: 2401152

Project: American Rockwool

## ANALYTICAL QC SUMMARY REPORT

RunID: WC\_240124A

The QC data in batch 113688 applies to the following samples: 2401152-01B

Sample ID: MB-113688	Batch ID: 113688	TestNo: M2540C	Units: mg/L
SampType: MBLK	Run ID: WC_240124A	Analysis Date: 1/24/2024 4:55:00 PM	Prep Date: 1/24/2024

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Total Dissolved Solids (Residue, Filtera	<10.0	10.0								
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Sample ID: LCS-113688	Batch ID: 113688	TestNo: M2540C	Units: mg/L
SampType: LCS	Run ID: WC_240124A	Analysis Date: 1/24/2024 4:55:00 PM	Prep Date: 1/24/2024

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Total Dissolved Solids (Residue, Filtera	749	10.0	745.6	0	100	90	113			
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Sample ID: 2401147-02A-DUP	Batch ID: 113688	TestNo: M2540C	Units: mg/L
SampType: DUP	Run ID: WC_240124A	Analysis Date: 1/24/2024 4:55:00 PM	Prep Date: 1/24/2024

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Total Dissolved Solids (Residue, Filtera	1060	50.0	0	1060				0.473	5	
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**Qualifiers:**

- B Analyte detected in the associated Method Blank
- J Analyte detected between MDL and RL
- ND Not Detected at the Method Detection Limit
- RL Reporting Limit
- J Analyte detected between SDL and RL

- DF Dilution Factor
- MDL Method Detection Limit
- R RPD outside accepted control limits
- S Spike Recovery outside control limits
- N Parameter not NELAP certified





**APPENDIX D**  
**Video Survey**  
**(Submitted Electronically)**

## Additional Documents

**Attachment 1**  
**Tom Lovelace Water Well Drilling Service**  
**Well and Pump Maintenance Invoice**

AMERICAN ROCKWOOL MANUFACTURING LLC			OPERATING ACCOUNT				2888
Tom Lovelace Water Well Drilling and Serv					10/12/2021		
Date	Type	Reference	Original Amt.	Balance Due	Discount	Payment	
9/30/2021	Bill	2021-436	529.48	529.48		529.48	
9/30/2021	Bill	2021-325	391.77	391.77		391.77	
Check Amount						921.25	

North Dallas Bank Op

921.25



# Tom Lovelace Water Well Service

**4997 Elm Grove Road  
Belton, TX 76513**

**Phone: (254) 939-5073**  
**Fax: (254) 939-3513**  
**Email: [lovelacewaterwell@att.net](mailto:lovelacewaterwell@att.net)**

# Invoice

<b>Date</b>	<b>Invoice #</b>
9/30/2021	2021-436

Billing Address:	Phone #:
American Rockwool Mfg. 440 Jackrabbit Flat Road Nolanville, TX. 76559	254-681-0313 (Scott)
	Alt. Phone #
	214-882-1343 Jim Deib
E-mail:	

**E-mail:**

**jdeibel@americanrockwool.com**

Physical Address/Directions

Qty	Description	Amount
1	Pump Master Plus Pump Up Float Switch w/ 30' cord	96.00T
1	Labor to install new switch in storage tank	400.00T

☐ Mail    ☐ Fax    ☐ Email    ☐ Job Site

<b>Subtotal</b>	<b>\$496.00</b>
<b>Sales Tax (6.75%)</b>	<b>\$33.48</b>
<b>Total</b>	<b>\$529.48</b>

**Regulated by Texas Department of Licensing and Regulation  
P.O. Box 12157  
Austin, TX 78711**

# Tom Lovelace Water Well Service

**4997 Elm Grove Road  
Belton, TX 76513**

**Phone: (254) 939-5073**  
**Fax: (254) 939-3513**  
**Email: [lovelacewaterwell@att.net](mailto:lovelacewaterwell@att.net)**

# Invoice

<b>Date</b>	<b>Invoice #</b>
7/28/2021	2021-325

<b>Billing Address:</b>	<b>Phone #:</b>
<b>American Rockwool Mfg.</b> <b>440 Jackrabbit Flat Road</b> <b>Nolanville, TX. 76559</b>	<b>254-681-0313 (Scott)</b>
	<b>Alt. Phone #</b>
	<b>214-882-1343 Jim Deib</b>
<b>E-mail:</b>	

**E-mail:**  
**jdeibel@americanrockwool.com**

Physical Address/Directions

Qty	Description	Amount
1	3 Phase Magnetic Coil	167.00T
1	Labor to repair and troubleshoot well	200.00T

☐ Mail    ☐ Fax    ☐ Email    ☐ Job Site

<b>Subtotal</b>	<b>\$367.00</b>
<b>Sales Tax (6.75%)</b>	<b>\$24.77</b>
<b>Total</b>	<b>\$391.77</b>



1199

Tom Lovelace Water Well Drilling and Serv

Date	Type	Reference	Original Amt.	Balance Due	6/1/2016 Discount	Payment
5/19/2016	Bill	2016-9	18,980.03	18,980.03		18,980.03
					Check Amount	18,980.03

North Dallas Bank Op

18,980.03



10254 (3/16) J112688



# Tom Lovelace Water Well Drilling and Service

## Invoice

4997 Elm Grove Road  
Belton, TX 76513

Phone: (254) 939-5073  
Fax: (254) 939-3513  
Email: lovelacewaterwell@att.net

Date	Invoice #
5/19/2016	2016-9

Billing Address:	Phone #:
American Rockwool Mfg. 440 Jackrabbit Road Nolanville, TX. 76559	254-681-0313 (Scott)
E-mail:	Alt. Phone #

ssimmons@amerrock.com

Physical Address/Directions

Qty	Description	Amount
1	6" 25HP 460v 3ph Franklin Sandfighter Motor (model # 2366158120)	3,656.00T
1	6" 150GPM Franklin Submersible Pump End- 150STS25D5A-1063	4,315.00T
1	Pump Panel with Franklin Premium Submonitor	1,903.00T
105	feet 3" Wheatland USA Galvanized Pipe T&C w/ heavy duty API coupling	1,422.00T
2	3" Ductile Iron Check Valves	416.00T
1	Heat shrink splice Kits, 2" pipe wrap tape, centralizers and air line	760.00T
1	Stainless Steel and Galvanized fittings and pressure relief valve	528.00T
1	Low Level Tank Alarm with Float Switch	268.00T
1	Pump Master Plus Pump Up Float Switch w/ 30' cord	86.00T
1	Wiring, Junction Box, connectors & flex conduit w/ connectors	343.00T
1	Labor to remove existing pump system and replace with above parts	4,000.00T
PE date code: 042016A, Motor date code: 15G19		
<i>Documen 05/20/16</i>		

☒ Mail ☐ Fax ☐ Email ☐ Job Site

Subtotal	\$17,697.00
Sales Tax (7.25%)	\$1,283.03
<b>Total</b>	<b>\$18,980.03</b>

# Tom Lovelace Water Well Drilling

4997 Elm Grove Road  
Belton, TX. 76513

BID #	Date
222	1/22/2016

Phone: (254) 939-5073  
Fax: (254) 939-3513  
Email: lovelacewaterwell@att.net

## BID SHEET

Billing Address:	Phone #
Texas Amerrock 1000 Paddy Hamilton Rd Nolanville, TX. 76559	254-681-0313 (Scott)
	Alt. Phone #
E-mail	

ssimmons@amerrock.com

Physical Address / Directions:

Qty	Description	Total
1	6" 25HP 460v 3ph Franklin Sandfighter Motor	3,656.00T
1	6" 150GPM Franklin Submersible Pump End- STS series (150 - 200gpm)	4,315.00T
1	Franklin Premium Submonitor Pump Panel	1,903.00T
630	feet 3" Wheatland USA Galvanized Pipe T&C w/ heavy duty API coupling	8,530.00T
3	3" Ductile Iron Check Valves	624.00T
1	Heat shrink splice Kits, 2" pipe wrap tape, centralizers and air line	760.00T
1	Stainless Steel and Galvanized fittings and pressure relief valve	528.00T
1	Labor to remove existing pump system and replace with above parts	4,000.00T
The 3" Wheatland galvanized pipe is to be replaced as needed. All or part of the 630' estimated pipe may or may not need to be replaced?		
<i>\$18,554.01<sup>2</sup></i>		
Subtotal		\$24,316.00

☐ Mail ☐ Fax ☐ Email ☐ Job Site

Sales Tax (7.25%) \$1,762.91

Total \$26,078.91

**Attachment 2**  
**Title V and PSD Permits**

# FEDERAL OPERATING PERMIT

A FEDERAL OPERATING PERMIT IS HEREBY ISSUED TO  
American Rockwool Manufacturing, LLC

AUTHORIZING THE OPERATION OF  
Nolanville Plant

Mineral Wool Manufacturing

LOCATED AT  
Bell County, Texas  
Latitude 31° 4' 26" Longitude 97° 34' 30"  
Regulated Entity Number: RN100215243

This permit is issued in accordance with and subject to the Texas Clean Air Act (TCAA), Chapter 382 of the Texas Health and Safety Code and Title 30 Texas Administrative Code Chapter 122 (30 TAC Chapter 122), Federal Operating Permits. Under 30 TAC Chapter 122, this permit constitutes the permit holder's authority to operate the site and emission units listed in this permit. Operations of the site and emission units listed in this permit are subject to all additional rules or amended rules and orders of the Commission pursuant to the TCAA.

This permit does not relieve the permit holder from the responsibility of obtaining New Source Review authorization for new, modified, or existing facilities in accordance with 30 TAC Chapter 116, Control of Air Pollution by Permits for New Construction or Modification.

The site and emission units authorized by this permit shall be operated in accordance with 30 TAC Chapter 122, the general terms and conditions, special terms and conditions, and attachments contained herein.

This permit shall expire five years from the date of issuance. The renewal requirements specified in 30 TAC § 122.241 must be satisfied in order to renew the authorization to operate the site and emission units.

Permit No: 01134 Issuance Date: May 23, 2019



For the Commission

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## **General Terms and Conditions**

The permit holder shall comply with all terms and conditions contained in 30 TAC § 122.143 (General Terms and Conditions), 30 TAC § 122.144 (Recordkeeping Terms and Conditions), 30 TAC § 122.145 (Reporting Terms and Conditions), and 30 TAC § 122.146 (Compliance Certification Terms and Conditions).

In accordance with 30 TAC § 122.144(1), records of required monitoring data and support information required by this permit, or any applicable requirement codified in this permit, are required to be maintained for a period of five years from the date of the monitoring report, sample, or application unless a longer data retention period is specified in an applicable requirement. The five year record retention period supersedes any less stringent retention requirement that may be specified in a condition of a permit identified in the New Source Review Authorization attachment.

If the permit holder chooses to demonstrate that this permit is no longer required, a written request to void this permit shall be submitted to the Texas Commission on Environmental Quality (TCEQ) by the Responsible Official in accordance with 30 TAC § 122.161(e). The permit holder shall comply with the permit's requirements, including compliance certification and deviation reporting, until notified by the TCEQ that this permit is voided.

The permit holder shall comply with 30 TAC Chapter 116 by obtaining a New Source Review authorization prior to new construction or modification of emission units located in the area covered by this permit.

All reports required by this permit must include in the submittal a cover letter which identifies the following information: company name, TCEQ regulated entity number, air account number (if assigned), site name, area name (if applicable), and Air Permits Division permit number(s).

## **Special Terms and Conditions:**

### **Emission Limitations and Standards, Monitoring and Testing, and Recordkeeping and Reporting**

1. Permit holder shall comply with the following requirements:
  - A. Emission units (including groups and processes) in the Applicable Requirements Summary attachment shall meet the limitations, standards, equipment specifications, monitoring, recordkeeping, reporting, testing, and other requirements listed in the Applicable Requirements Summary attachment to assure compliance with the permit.
  - B. The textual description in the column titled "Textual Description" in the Applicable Requirements Summary attachment is not enforceable and is not deemed as a substitute for the actual regulatory language. The Textual Description is provided for information purposes only.
  - C. A citation listed on the Applicable Requirements Summary attachment, which has a notation [G] listed before it, shall include the referenced section and subsection for all commission rules, or paragraphs for all federal and state regulations and all subordinate paragraphs, subparagraphs and clauses, subclauses, and items contained within the referenced citation as applicable requirements.
  - D. When a grouped citation, notated with a [G] in the Applicable Requirements Summary, contains multiple compliance options, the permit holder must keep records of when each compliance option was used.



- E. Emission units subject to 40 CFR Part 63, Subpart DDD as identified in the attached Applicable Requirements Summary table are subject to 30 TAC Chapter 113, Subchapter C, § 113.610 which incorporates the 40 CFR Part 63 Subpart by reference.
2. The permit holder shall comply with the following sections of 30 TAC Chapter 101 (General Air Quality Rules):
- A. Title 30 TAC § 101.1 (relating to Definitions), insofar as the terms defined in this section are used to define the terms used in other applicable requirements
  - B. Title 30 TAC § 101.3 (relating to Circumvention)
  - C. Title 30 TAC § 101.8 (relating to Sampling), if such action has been requested by the TCEQ
  - D. Title 30 TAC § 101.9 (relating to Sampling Ports), if such action has been requested by the TCEQ
  - E. Title 30 TAC § 101.10 (relating to Emissions Inventory Requirements)
  - F. Title 30 TAC § 101.201 (relating to Emission Event Reporting and Recordkeeping Requirements)
  - G. Title 30 TAC § 101.211 (relating to Scheduled Maintenance, Start-up, and Shutdown Reporting and Recordkeeping Requirements)
  - H. Title 30 TAC § 101.221 (relating to Operational Requirements)
  - I. Title 30 TAC § 101.222 (relating to Demonstrations)
  - J. Title 30 TAC § 101.223 (relating to Actions to Reduce Excessive Emissions)
3. Permit holder shall comply with the following requirements of 30 TAC Chapter 111:
- A. Visible emissions from stationary vents with a flow rate of less than 100,000 actual cubic feet per minute and constructed after January 31, 1972 that are not listed in the Applicable Requirements Summary attachment for 30 TAC Chapter 111, Subchapter A, Division 1, shall not exceed 20% opacity averaged over a six-minute period. The permit holder shall comply with the following requirements for stationary vents at the site subject to this standard:
    - (i) Title 30 TAC § 111.111(a)(1)(B) (relating to Requirements for Specified Sources)
    - (ii) Title 30 TAC § 111.111(a)(1)(E)
    - (iii) Title 30 TAC § 111.111(a)(1)(F)(i), (ii), (iii), or (iv)
    - (iv) For emission units with vent emissions subject to 30 TAC § 111.111(a)(1)(B), complying with 30 TAC § 111.111(a)(1)(F)(ii), (iii), or (iv), and capable of producing visible emissions from, but not limited to, particulate matter, acid gases and NO<sub>x</sub>, the permit holder shall also comply with the following periodic monitoring requirements for the purpose of annual compliance certification under 30 TAC § 122.146. These periodic monitoring requirements do not apply to vents that are not capable of producing visible emissions such as vents that emit only colorless VOCs; vents from non-fuming liquids; vents that provide passive

ventilation, such as plumbing vents; or vent emissions from any other source that does not obstruct the transmission of light. Vents, as specified in the "Applicable Requirements Summary" attachment, that are subject to the emission limitation of 30 TAC § 111.111(a)(1)(B) are not subject to the following periodic monitoring requirements:

- (1) An observation of stationary vents from emission units in operation shall be conducted at least once during each calendar quarter unless the emission unit is not operating for the entire quarter.
- (2) For stationary vents from a combustion source, if an alternative to the normally fired fuel is fired for a period greater than or equal to 24 consecutive hours, the permit holder shall conduct an observation of the stationary vent for each such period to determine if visible emissions are present. If such period is greater than 3 months, observations shall be conducted once during each quarter. Supplementing the normally fired fuel with natural gas or fuel gas to increase the net heating value to the minimum required value does not constitute creation of an alternative fuel.
- (3) Records of all observations shall be maintained.
- (4) Visible emissions observations of emission units operated during daylight hours shall be conducted no earlier than one hour after sunrise and no later than one hour before sunset. Visible emissions observations of emission units operated only at night must be made with additional lighting and the temporary installation of contrasting backgrounds. Visible emissions observations shall be made during times when the activities described in 30 TAC § 111.111(a)(1)(E) are not taking place. Visible emissions shall be determined with each stationary vent in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 mile, away from each stationary vent during the observation. For outdoor locations, the observer shall select a position where the sun is not directly in the observer's eyes. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. A certified opacity reader is not required for visible emissions observations.
- (5) Compliance Certification:
  - (a) If visible emissions are not present during the observation, the RO may certify that the source is in compliance with the applicable opacity requirement in 30 TAC § 111.111(a)(1) and (a)(1)(B).
  - (b) However, if visible emissions are present during the observation, the permit holder shall either list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2) or conduct the appropriate opacity test specified in 30 TAC § 111.111(a)(1)(F) as soon as practicable, but no later than 24 hours after observing visible emissions to determine if the source is in compliance with the opacity

requirements. If an opacity test is performed and the source is determined to be in compliance, the RO may certify that the source is in compliance with the applicable opacity requirement. However, if an opacity test is performed and the source is determined to be out of compliance, the permit holder shall list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2). The opacity test must be performed by a certified opacity reader.

- (c) Some vents may be subject to multiple visible emission or monitoring requirements. All credible data must be considered when certifying compliance with this requirement even if the observation or monitoring was performed to demonstrate compliance with a different requirement.

B. For visible emissions from a building, enclosed facility, or other structure; the permit holder shall comply with the following requirements:

- (i) Title 30 TAC § 111.111(a)(7)(A) (relating to Requirements for Specified Sources)
- (ii) Title 30 TAC § 111.111(a)(7)(B)(i) or (ii)
- (iii) For a building containing an air emission source, enclosed facility, or other structure containing or associated with an air emission source subject to 30 TAC § 111.111(a)(7)(A), complying with 30 TAC § 111.111(a)(7)(B)(i) or (ii), and capable of producing visible emissions from, but not limited to, particulate matter, acid gases and NO<sub>x</sub>, the permit holder shall also comply with the following periodic monitoring requirements for the purpose of annual compliance certification under 30 TAC § 122.146:
  - (1) An observation of visible emissions from a building containing an air emission source, enclosed facility, or other structure containing or associated with an air emission source which is required to comply with 30 TAC § 111.111(a)(7)(A) shall be conducted at least once during each calendar quarter unless the air emission source or enclosed facility is not operating for the entire quarter.
  - (2) Records of all observations shall be maintained.
  - (3) Visible emissions observations of air emission sources or enclosed facilities operated during daylight hours shall be conducted no earlier than one hour after sunrise and no later than one hour before sunset. Visible emissions observations of air emission sources or enclosed facilities operated only at night must be made with additional lighting and the temporary installation of contrasting backgrounds. Visible emissions shall be determined with each emissions outlet in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 mile, away from each emissions outlet during the observation. For outdoor locations, the observer shall select a position where the sun is not directly in the observer's eyes. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to

condensation of water vapor. A certified opacity reader is not required for visible emissions observations.

(4) Compliance Certification:

- (a) If visible emissions are not present during the observation, the RO may certify that the source is in compliance with the applicable opacity requirement in 30 TAC § 111.111(a)(7) and (a)(7)(A)
- (b) However, if visible emissions are present during the observation, the permit holder shall either list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2) or conduct the appropriate opacity test specified in 30 TAC § 111.111(a)(7)(B) as soon as practicable, but no later than 24 hours after observing visible emissions to determine if the source is in compliance with the opacity requirements. If an opacity test is performed and the source is determined to be in compliance, the RO may certify that the source is in compliance with the applicable opacity requirement. However, if an opacity test is performed and the source is determined to be out of compliance, the permit holder shall list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2). The opacity test must be performed by a certified opacity reader.

C. For visible emissions from all other sources not specified in 30 TAC § 111.111(a)(1), (4), or (7); the permit holder shall comply with the following requirements:

- (i) Title 30 TAC § 111.111(a)(8)(A) (relating to Requirements for Specified Sources)
- (ii) Title 30 TAC § 111.111(a)(8)(B)(i) or (ii)
- (iii) For a source subject to 30 TAC § 111.111(a)(8)(A), complying with 30 TAC § 111.111(a)(8)(B)(i) or (ii), and capable of producing visible emissions from, but not limited to, particulate matter, acid gases and NO<sub>x</sub>, the permit holder shall also comply with the following periodic monitoring requirements for the purpose of annual compliance certification under 30 TAC § 122.146:
  - (1) An observation of visible emissions from a source which is required to comply with 30 TAC § 111.111(a)(8)(A) shall be conducted at least once during each calendar quarter unless the source is not operating for the entire quarter.
  - (2) Records of all observations shall be maintained.
  - (3) Visible emissions observations of sources operated during daylight hours shall be conducted no earlier than one hour after sunrise and no later than one hour before sunset. Visible emissions observations of sources operated only at night must be made with additional lighting and the temporary installation of contrasting backgrounds. Visible emissions shall be determined with each source in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 mile, away from each source during the observation. For outdoor locations, the observer shall select a position where the sun is not directly in the observer's

eyes. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. A certified opacity reader is not required for visible emissions observations.

(4) Compliance Certification:

- (a) If visible emissions are not present during the observation, the RO may certify that the source is in compliance with the applicable opacity requirement in 30 TAC § 111.111(a)(8) and (a)(8)(A)
- (b) However, if visible emissions are present during the observation, the permit holder shall either list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2) or conduct the appropriate opacity test specified in 30 TAC § 111.111(a)(8)(B) as soon as practicable, but no later than 24 hours after observing visible emissions to determine if the source is in compliance with the opacity requirements. If an opacity test is performed and the source is determined to be in compliance, the RO may certify that the source is in compliance with the applicable opacity requirement. However, if an opacity test is performed and the source is determined to be out of compliance, the permit holder shall list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2). The opacity test must be performed by a certified opacity reader.

D. Certification of opacity readers determining opacities under Method 9 (as outlined in 40 CFR Part 60, Appendix A) to comply with opacity monitoring requirements shall be accomplished by completing the Visible Emissions Evaluators Course, or approved agency equivalent, no more than 180 days before the opacity reading.

E. For emission units with contributions from uncombined water, the permit holder shall comply with the requirements of 30 TAC § 111.111(b).

F. Emission limits on nonagricultural processes, except for the steam generators specified in 30 TAC § 111.153, shall comply with the following requirements:

- (i) Emissions of PM from any source may not exceed the allowable rates as required in 30 TAC § 111.151(a) (relating to Allowable Emissions Limits)
- (ii) Sources with an effective stack height ( $h_e$ ) less than the standard effective stack height ( $H_e$ ), must reduce the allowable emission level by multiplying it by  $[h_e/H_e]^2$  as required in 30 TAC § 111.151(b)
- (iii) Effective stack height shall be calculated by the equation specified in 30 TAC § 111.151(c)

4. The permit holder shall comply with the requirements of 30 TAC Chapter 113, Subchapter C, § 113.100 for units subject to any subpart of 40 CFR Part 63, unless otherwise stated in the applicable subpart.

### **Additional Monitoring Requirements**

5. Unless otherwise specified, the permit holder shall comply with the compliance assurance monitoring requirements as specified in the attached "CAM Summary" upon issuance of the permit. In addition, the permit holder shall comply with the following:
  - A. The permit holder shall comply with the terms and conditions contained in 30 TAC § 122.147 (General Terms and Conditions for Compliance Assurance Monitoring).
  - B. The permit holder shall report, consistent with the averaging time identified in the "CAM Summary," deviations as defined by the deviation limit in the "CAM Summary." Any monitoring data below a minimum limit or above a maximum limit, that is collected in accordance with the requirements specified in 40 CFR § 64.7(c), shall be reported as a deviation. Deviations shall be reported according to 30 TAC § 122.145 (Reporting Terms and Conditions).
  - C. The permit holder may elect to collect monitoring data on a more frequent basis and average the data, consistent with the averaging time or minimum frequency specified in the "CAM Summary," for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis. In no event shall data be collected and used in particular instances in order to avoid reporting deviations. All monitoring data shall be collected in accordance with the requirements specified in 40 CFR § 64.7(c).
  - D. The permit holder shall operate the monitoring, identified in the attached "CAM Summary," in accordance with the provisions of 40 CFR § 64.7.
  - E. The permit holder shall comply with either of the following requirements for any particulate matter capture system associated with the control device subject to CAM. If the results of the following inspections indicate that the capture system is not working properly, the permit holder shall promptly take necessary corrective action:
    - (i) Once per year the permit holder shall inspect any fan for proper operation and inspect the capture system used in compliance of CAM for cracks, holes, tears, and other defects; or
    - (ii) Once per year, the permit holder shall inspect for fugitive emissions escaping from the capture system in compliance of CAM by performing a visible emissions observation for a period of at least six minutes in accordance with 40 CFR Part 60, Appendix A, Test Method 22.
  - F. The permit holder shall comply with the requirements of 40 CFR § 70.6(a)(3)(ii)(A) and 30 TAC § 122.144(1)(A)-(F) for documentation of all required inspections.
6. The permit holder shall comply with the periodic monitoring requirements as specified in the attached "Periodic Monitoring Summary" upon issuance of the permit. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the permit holder shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. The permit holder may elect to collect monitoring data on a more frequent basis and average the data, consistent with the averaging time or minimum frequency specified in the "Periodic Monitoring Summary," for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis. In no event shall data be collected and used in particular

instances to avoid reporting deviations. Deviations shall be reported according to 30 TAC § 122.145 (Reporting Terms and Conditions).

#### **New Source Review Authorization Requirements**

7. Permit holder shall comply with the requirements of New Source Review authorizations issued or claimed by the permit holder for the permitted area, including permits, permits by rule, standard permits, flexible permits, special permits, permits for existing facilities including Voluntary Emissions Reduction Permits and Electric Generating Facility Permits issued under 30 TAC Chapter 116, Subchapter I, or special exemptions referenced in the New Source Review Authorization References attachment. These requirements:
  - A. Are incorporated by reference into this permit as applicable requirements
  - B. Shall be located with this operating permit
  - C. Are not eligible for a permit shield
8. The permit holder shall comply with the general requirements of 30 TAC Chapter 106, Subchapter A or the general requirements, if any, in effect at the time of the claim of any PBR.
9. The permit holder shall maintain records to demonstrate compliance with any emission limitation or standard that is specified in a permit by rule (PBR) or Standard Permit listed in the New Source Review Authorizations attachment. The records shall yield reliable data from the relevant time period that are representative of the emission unit's compliance with the PBR or Standard Permit. These records may include, but are not limited to, production capacity and throughput, hours of operation, safety data sheets (SDS), chemical composition of raw materials, speciation of air contaminant data, engineering calculations, maintenance records, fugitive data, performance tests, capture/control device efficiencies, direct pollutant monitoring (CEMS, COMS, or PEMS), or control device parametric monitoring. These records shall be made readily accessible and available as required by 30 TAC § 122.144. Any monitoring or recordkeeping data indicating noncompliance with the PBR or Standard Permit shall be considered and reported as a deviation according to 30 TAC § 122.145 (Reporting Terms and Conditions).

#### **Compliance Requirements**

10. The permit holder shall certify compliance in accordance with 30 TAC § 122.146. The permit holder shall comply with 30 TAC § 122.146 using at a minimum, but not limited to, the continuous or intermittent compliance method data from monitoring, recordkeeping, reporting, or testing required by the permit and any other credible evidence or information. The certification period may not exceed 12 months and the certification must be submitted within 30 days after the end of the period being certified.
11. Use of Discrete Emission Credits to comply with the applicable requirements:
  - A. Unless otherwise prohibited, the permit holder may use discrete emission credits to comply with the following applicable requirements listed elsewhere in this permit:
    - (i) Title 30 TAC Chapter 115
    - (ii) Title 30 TAC Chapter 117
    - (iii) If applicable, offsets for Title 30 TAC Chapter 116
    - (iv) Temporarily exceed state NSR permit allowables



- B. The permit holder shall comply with the following requirements in order to use the credit to comply with the applicable requirements:
- (i) The permit holder must notify the TCEQ according to 30 TAC § 101.376(d)
  - (ii) The discrete emission credits to be used must meet all the geographic, timeliness, applicable pollutant type, and availability requirements listed in 30 TAC Chapter 101, Subchapter H, Division 4
  - (iii) The executive director has approved the use of the discrete emission credits according to 30 TAC § 101.376(d)(1)(A)
  - (iv) The permit holder keeps records of the use of credits towards compliance with the applicable requirements in accordance with 30 TAC § 101.372(h) and 30 TAC Chapter 122
  - (v) Title 30 TAC § 101.375 (relating to Emission Reductions Achieved Outside the United States)

#### **Protection of Stratospheric Ozone**

12. Permit holders at a site subject to Title VI of the FCAA Amendments shall meet the following requirements for protection of stratospheric ozone:
- A. Any on site servicing, maintenance, and repair on refrigeration and nonmotor vehicle air-conditioning appliances using ozone-depleting refrigerants or non-exempt substitutes shall be conducted in accordance with 40 CFR Part 82, Subpart F. Permit holders shall ensure that repairs on or refrigerant removal from refrigeration and nonmotor vehicle air-conditioning appliances using ozone-depleting refrigerants are performed only by properly certified technicians using certified equipment. Records shall be maintained as required by 40 CFR Part 82, Subpart F.

#### **Temporary Fuel Shortages (30 TAC § 112.15)**

13. The permit holder shall comply with the following 30 TAC Chapter 112 requirements:
- A. Title 30 TAC § 112.15 (relating to Temporary Fuel Shortage Plan Filing Requirements)
  - B. Title 30 TAC § 112.16(a), (a)(1), and (a)(2)(B) - (C) (relating to Temporary Fuel Shortage Plan Operating Requirements)
  - C. Title 30 TAC § 112.17 (relating to Temporary Fuel Shortage Plan Notification Procedures)
  - D. Title 30 TAC § 112.18 (relating to Temporary Fuel Shortage Plan Reporting Requirements)

#### **Permit Location**

14. The permit holder shall maintain a copy of this permit and records related to requirements listed in this permit on site.

**Permit Shield (30 TAC § 122.148)**

15. A permit shield is granted for the emission units, groups, or processes specified in the attached "Permit Shield." Compliance with the conditions of the permit shall be deemed compliance with the specified potentially applicable requirements or specified potentially applicable state-only requirements listed in the attachment "Permit Shield." Permit shield provisions shall not be modified by the executive director until notification is provided to the permit holder. No later than 90 days after notification of a change in a determination made by the executive director, the permit holder shall apply for the appropriate permit revision to reflect the new determination. Provisional terms are not eligible for this permit shield. Any term or condition, under a permit shield, shall not be protected by the permit shield if it is replaced by a provisional term or condition or the basis of the term and condition changes.

#### **Attachments**

**Applicable Requirements Summary**

**Additional Monitoring Requirements**

**Permit Shield**

**New Source Review Authorization References**

**Applicable Requirements Summary**

**Unit Summary ..... 13**

**Applicable Requirements Summary ..... 14**

Note: A "none" entry may be noted for some emission sources in this permit's "Applicable Requirements Summary" under the heading of "Monitoring and Testing Requirements" and/or "Recordkeeping Requirements" and/or "Reporting Requirements." Such a notation indicates that there are no requirements for the indicated emission source as identified under the respective column heading(s) for the stated portion of the regulation when the emission source is operating under the conditions of the specified SOP Index Number. However, other relevant requirements pursuant to 30 TAC Chapter 122 including Recordkeeping Terms and Conditions (30 TAC § 122.144), Reporting Terms and Conditions (30 TAC § 122.145), and Compliance Certification Terms and Conditions (30 TAC § 122.146) continue to apply.

**Unit Summary**

<b>Unit/Group/ Process ID No.</b>	<b>Unit Type</b>	<b>Group/Inclusive Units</b>	<b>SOP Index No.</b>	<b>Regulation</b>	<b>Requirement Driver</b>
GRPCUPOLAS	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	CUP1, CUP2	R1111	30 TAC Chapter 111, Visible Emissions	No changing attributes.
GRPCUPOLAS	MISCELLANEOUS UNITS	CUP1, CUP2	63DDD	40 CFR Part 63, Subpart DDD	No changing attributes.
SCRUBBER	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R1151	30 TAC Chapter 111, Nonagricultural Processes	No changing attributes.
SCRUBBER	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	111-VENT00020	30 TAC Chapter 111, Visible Emissions	No changing attributes.

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
GRPCUPOL AS	EU	R1111	Opacity	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(A) § 111.111(a)(1)(E)	Visible emissions from any stationary vent shall not exceed an opacity of 30% averaged over a six minute period.	[G]§ 111.111(a)(1)(F) ** See Periodic Monitoring Summary	None	None
GRPCUPOL AS	EU	63DDD	PM	40 CFR Part 63, Subpart DDD	§ 63.1178(a)-Table 2.1 § 63.1178(b)(1) § 63.1178(b)(2) § 63.1180(b) [G]§ 63.1184 § 63.1197(a) § 63.1197(b) § 63.1197(c) § 63.1197(d) § 63.1197(e)	Limit emissions of particulate matter (PM) from each cupola commenced construction on or before May 8, 1997 to 0.10 lb per ton of melt.	§ 63.1181(a) § 63.1181(b) § 63.1181(c) § 63.1181(d) [G]§ 63.1186 [G]§ 63.1187(b) § 63.1188(a) § 63.1188(b) § 63.1188(c) § 63.1188(d) § 63.1188(f) § 63.1188(g) § 63.1188(h) [G]§ 63.1189 § 63.1190(a)	§ 63.1181(d) § 63.1188(g) § 63.1188(h) § 63.1192(a) § 63.1192(b) § 63.1192(b)(1) § 63.1192(b)(2) § 63.1192(c) § 63.1192(d) § 63.1197(e)	§ 63.1187(a) § 63.1191(a) § 63.1191(a)(2) § 63.1191(d) § 63.1191(e) § 63.1192(e) [G]§ 63.1193
GRPCUPOL AS	EU	63DDD	COS	40 CFR Part 63, Subpart DDD	§ 63.1178(a)-Table 2.7 § 63.1180(b) § 63.1197(a) § 63.1197(b) § 63.1197(c) § 63.1197(d) § 63.1197(e)	Limit emissions of carbonyl sulfide (COS) from each open-top cupola commenced construction on or before November 25, 2011 to 6.8 lb per ton of melt.	[G]§ 63.1186 [G]§ 63.1187(b) § 63.1188(a) § 63.1188(b) § 63.1188(c) § 63.1188(d) § 63.1188(f) § 63.1188(g) § 63.1188(h) [G]§ 63.1189 § 63.1190(b)	§ 63.1188(g) § 63.1188(h) § 63.1192(a) § 63.1192(b) § 63.1192(b)(1) § 63.1192(c) § 63.1192(d) § 63.1197(e)	§ 63.1187(a) § 63.1191(a) § 63.1191(a)(2) § 63.1191(d) § 63.1191(e) § 63.1192(e) [G]§ 63.1193
GRPCUPOL AS	EU	63DDD	HF	40 CFR Part 63, Subpart DDD	§ 63.1178(a)-Table 2.9 § 63.1180(b) § 63.1197(a) § 63.1197(b) § 63.1197(c) § 63.1197(d)	Limit emissions of hydrogen fluoride (HF) from each cupola that uses slag as a raw material and commenced construction on or before November 25, 2011 to 0.16 lb per ton of	[G]§ 63.1186 [G]§ 63.1187(b) § 63.1188(a) § 63.1188(b) § 63.1188(c) § 63.1188(d) § 63.1188(f)	§ 63.1188(g) § 63.1188(h) § 63.1192(a) § 63.1192(b) § 63.1192(b)(1) § 63.1192(c) § 63.1192(d)	§ 63.1187(a) § 63.1191(a) § 63.1191(a)(2) § 63.1191(d) § 63.1191(e) § 63.1192(e) [G]§ 63.1193

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 63.1197(e)	melt.	§ 63.1188(g) § 63.1188(h) [G]§ 63.1189 § 63.1190(b)	§ 63.1197(e)	
GRPCUPOL AS	EU	63DDD	HCL	40 CFR Part 63, Subpart DDD	§ 63.1178(a)-Table 2.9 § 63.1180(b) [G]§ 63.1184 § 63.1197(a) § 63.1197(b) § 63.1197(c) § 63.1197(d) § 63.1197(e)	Limit emissions of hydrogen chloride (HCl) from each cupola that uses slag as a raw material and commenced construction on or before November 25, 2011 to 0.44 lb per ton of melt.	[G]§ 63.1186 [G]§ 63.1187(b) § 63.1188(a) § 63.1188(b) § 63.1188(c) § 63.1188(d) § 63.1188(f) § 63.1188(g) § 63.1188(h) [G]§ 63.1189 § 63.1190(b)	§ 63.1188(g) § 63.1188(h) § 63.1192(a) § 63.1192(b) § 63.1192(b)(1) § 63.1192(c) § 63.1192(d) § 63.1197(e)	§ 63.1187(a) § 63.1191(a) § 63.1191(a)(2) § 63.1191(d) § 63.1191(e) § 63.1192(e) [G]§ 63.1193
SCRUBBER	EP	R1151	PM	30 TAC Chapter 111, Nonagricultural Processes	§ 111.151(a) § 111.151(b) § 111.151(c)	No person may cause, suffer, allow, or permit emissions of particulate matter from any source to exceed the allowable rates specified in Table 1 as follows, except as provided by §111.153 of this title (relating to Emissions Limits for Steam Generators).	** See CAM Summary	None	None
SCRUBBER	EP	111-VENT00020	Opacity	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(C) § 111.111(a)(1)(E)	Visible emissions from any stationary vent shall not exceed an opacity of 15% averaged over a six minute period for any source with a total flow rate of at least 100,000 acfm unless a CEMS is installed.	[G]§ 111.111(a)(1)(F) ** See CAM Summary	None	None

**Additional Monitoring Requirements**

<b>Compliance Assurance Monitoring Summary .....</b>	<b>17</b>
<b>Periodic Monitoring Summary .....</b>	<b>21</b>



### CAM Summary

<b>Unit/Group/Process Information</b>	
ID No.: SCRUBBER	
Control Device ID No.: SCRUBBER	Control Device Type: Wet Scrubber
<b>Applicable Regulatory Requirement</b>	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: 111-VENT00020
Pollutant: Opacity	Main Standard: § 111.111(a)(1)(C)
<b>Monitoring Information</b>	
Indicator: Liquid Flow Rate	
Minimum Frequency: Once per day	
Averaging Period: n/a	
Deviation Limit: Minimum Liquid Flow Rate = 245 gal/min	
<p>CAM Text: Each monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications, other written procedures that provide an adequate assurance that the device is calibrated accurately, or at least annually, whichever is more frequent, and shall be accurate to within one of the following:</p> <ul style="list-style-type: none"> <li>± 2% of span; or</li> <li>± 5% of design liquid flow rate.</li> </ul>	

### CAM Summary

Unit/Group/Process Information	
ID No.: SCRUBBER	
Control Device ID No.: SCRUBBER	Control Device Type: Wet Scrubber
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: 111-VENT00020
Pollutant: Opacity	Main Standard: § 111.111(a)(1)(C)
Monitoring Information	
Indicator: Visual Inspection of Spray System	
Minimum Frequency: Once per day	
Averaging Period: n/a	
Deviation Limit: Any not thoroughly distributed spray pattern needs to be corrected within 72 hours of observation.	
<p>CAM Text: Results of daily visual inspections will be maintained in a written log. The inspection procedures will be re-evaluated any time the scrubber system is modified to ensure that the inspections remain effective indicators of scrubber performance. If the observations cannot be safely conducted due to weather conditions, the date, time, and specific weather conditions shall be recorded.</p> <p>Personnel that will perform visual inspections of the spray system will receive initial training on acceptable spray pattern and corrective actions should they observe an unacceptable spray pattern. Corrective actions could include cleaning debris from the scrubber, cleaning clogged nozzles, replacing worn or inoperative nozzles, cleaning/replacing piping, or other appropriate actions.</p> <p>Measurement devices will be located and installed and visual inspections shall be taken from a vantage point such that representative data is obtained.</p> <p>Prior to the first liquid flow measurements, the permit holder will verify the measurement equipment in general accordance with the manufacturer's recommended installation, calibration, and start-up procedures.</p>	

### CAM Summary

Unit/Group/Process Information	
ID No.: SCRUBBER	
Control Device ID No.: SCRUBBER	Control Device Type: Wet Scrubber
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Nonagricultural Processes	SOP Index No.: R1151
Pollutant: PM	Main Standard: § 111.151(a)
Monitoring Information	
Indicator: Liquid Flow Rate	
Minimum Frequency: Once per day	
Averaging Period: n/a	
Deviation Limit: Minimum Liquid Flow Rate = 245 gal/min	
<p>CAM Text: Each monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications, other written procedures that provide an adequate assurance that the device is calibrated accurately, or at least annually, whichever is more frequent, and shall be accurate to within one of the following:</p> <ul style="list-style-type: none"> <li>± 2% of span; or</li> <li>± 5% of design liquid flow rate.</li> </ul>	

### CAM Summary

Unit/Group/Process Information	
ID No.: SCRUBBER	
Control Device ID No.: SCRUBBER	Control Device Type: Wet Scrubber
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Nonagricultural Processes	SOP Index No.: R1151
Pollutant: PM	Main Standard: § 111.151(a)
Monitoring Information	
Indicator: Visual Inspection of Spray System	
Minimum Frequency: once per day	
Averaging Period: n/a	
Deviation Limit: Any not thoroughly distributed spray pattern needs to be corrected within 72 hours of observation.	
<p>CAM Text: Results of daily visual inspections will be maintained in a written log. The inspection procedures will be re-evaluated any time the scrubber system is modified to ensure that the inspections remain effective indicators of scrubber performance. If the observations cannot be safely conducted due to weather conditions, the date, time, and specific weather conditions shall be recorded.</p> <p>Personnel that will perform visual inspections of the spray system will receive initial training on acceptable spray pattern and corrective actions should they observe an unacceptable spray pattern. Corrective actions could include cleaning debris from the scrubber, cleaning clogged nozzles, replacing worn or inoperative nozzles, cleaning/replacing piping, or other appropriate actions.</p> <p>Prior to the first liquid flow measurements, the permit holder will verify the measurement equipment in general accordance with the manufacturer's recommended installation, calibration, and start-up procedures.</p>	

### Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: GRPCUPOLAS	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: R1111
Pollutant: Opacity	Main Standard: § 111.111(a)(1)(A)
Monitoring Information	
Indicator: Visible Emissions	
Minimum Frequency: once per quarter	
Averaging Period: n/a	
Deviation Limit: If opacity is greater than 30%, the permit holder shall report a deviation.	
<p>Periodic Monitoring Text: Visible emissions observations shall be made and recorded. Note that to properly determine the presence of visible emissions, all sources must be in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 miles, away from the emission source during the observation. The observer shall select a position where the sun is not directly in the observer's eyes. If the observations cannot be conducted due to weather conditions, the date, time, and specific weather conditions shall be recorded. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor.</p> <p>If visible emissions are observed, the permit holder shall report a deviation. As an alternative, the permit holder may determine the opacity consistent with Test Method 9, as soon as practicable, but no later than 24 hours after observing visible emissions. If a Test Method 9 is performed, the opacity limit is the corresponding opacity limit associated with the particulate matter standard in the underlying applicable requirement. If there is no corresponding opacity limit in the underlying applicable requirement, the maximum opacity will be established using the most recent performance test. If the result of the Test Method 9 is opacity above the corresponding opacity limit (associated with the particulate matter standard in the underlying applicable requirement or as identified as a result of a previous performance test to establish the maximum opacity limit), the permit holder shall report a deviation.</p>	

**Permit Shield**

**Permit Shield ..... 23**

### Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit/Group/Process		Regulation	Basis of Determination
ID No.	Group/Inclusive Units		
GRPBLTCNV	BINCONVYR, RADIALSTKR, RRCONVYR, SCRCONVYR, SHOTCONVYR	40 CFR Part 60, Subpart OOO	Stand-alone screening operations at a plant without crushers or grinding mills
GRPOILTANK	OILTANK 1, OILTANK 2	30 TAC Chapter 115, Storage of VOCs	Facility is located in Bell County and transfers only non-gasoline VOC
GRPOILTANK	OILTANK 1, OILTANK 2	40 CFR Part 60, Subpart K	Capacity < 40,000 gal
GRPOILTANK	OILTANK 1, OILTANK 2	40 CFR Part 60, Subpart Ka	Capacity < 40,000 gal
GRPOILTANK	OILTANK 1, OILTANK 2	40 CFR Part 60, Subpart Kb	Capacity < 40m3
GRPOILTANK	OILTANK 1, OILTANK 2	40 CFR Part 60, Subpart UU	Not an asphalt plant
GRPOILTANK	OILTANK 1, OILTANK 2	40 CFR Part 63, Subpart EEEE	Tufflo Oil stored at the facility does not meet the definition of an "organic liquid" per 40 CFR 63.2406. Tufflo Oil is a non-crude oil liquid with a vapor pressure less than 0.0013 kilopascals; therefore, this subpart is not applicable.
GRPOILTANK	OILTANK 1, OILTANK 2	40 CFR Part 63, Subpart R	Not a bulk gasoline terminal
HANDLINGFB	N/A	40 CFR Part 60, Subpart OOO	Stand-alone screening operations at a plant without crushers or grinding mills
HANDLINGSC	N/A	40 CFR Part 60, Subpart OOO	Stand-alone screening operations at a plant without crushers or grinding mills
SHOTSC	N/A	40 CFR Part 60, Subpart OOO	Stand-alone screening operations at a plant without crushers or grinding mills

**New Source Review Authorization References**

<b>New Source Review Authorization References .....</b>	<b>25</b>
<b>New Source Review Authorization References by Emission Unit .....</b>	<b>26</b>



### New Source Review Authorization References

The New Source Review authorizations listed in the table below are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Prevention of Significant Deterioration (PSD) Permits	
PSD Permit No.: PSDTX625M1	Issuance Date: 01/31/2019
Title 30 TAC Chapter 116 Permits, Special Permits, and Other Authorizations (Other Than Permits By Rule, PSD Permits, or NA Permits) for the Application Area.	
Authorization No.: 9397	Issuance Date: 01/31/2019
Permits By Rule (30 TAC Chapter 106) for the Application Area	
Number: 106.261	Version No./Date: 09/04/2000

### New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
BINCONVYR	WEIGHT HOPPER FEED BIN CONVEYOR	9397, PSDTX625M1
CUP1	CUPOLA 1	9397, PSDTX625M1
CUP2	CUPOLA 2	9397, PSDTX625M1
HANDLINGFB	RAW MATERIAL AND COKE FEED BINS	9397, PSDTX625M1
HANDLINGSC	SCREENING	9397, PSDTX625M1
OILTANK 1	TUFFLO OIL TANK 1	9397, PSDTX625M1
OILTANK 2	TUFFLO OIL TANK 2	9397, PSDTX625M1
RADIALSTKR	RADIAL STACKER CONVEYOR	9397, PSDTX625M1
RRCONVYR	RAILROAD CAR UNLOADING CONVEYOR	9397, PSDTX625M1
SCRCONVYR	SCREENING FEED CONVEYOR	9397, PSDTX625M1
SCRUBBER	BLOWING AND BAGGING CONTROL DEVICE	9397, PSDTX625M1
SHOTCONVYR	CONVEYOR	106.261/09/04/2000
SHOTSC	SCREEN	106.261/09/04/2000

## **Appendix A**

<b>Acronym List .....</b>	<b>28</b>
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## Acronym List

The following abbreviations or acronyms may be used in this permit:

ACFM .....	actual cubic feet per minute
AMOC .....	alternate means of control
ARP .....	Acid Rain Program
ASTM .....	American Society of Testing and Materials
B/PA .....	Beaumont/Port Arthur (nonattainment area)
CAM .....	Compliance Assurance Monitoring
CD .....	control device
CEMS .....	continuous emissions monitoring system
CFR .....	Code of Federal Regulations
COMS .....	continuous opacity monitoring system
CVS .....	closed vent system
D/FW .....	Dallas/Fort Worth (nonattainment area)
EP .....	emission point
EPA .....	U.S. Environmental Protection Agency
EU .....	emission unit
FCAA Amendments .....	Federal Clean Air Act Amendments
FOP .....	federal operating permit
gr/100 scf .....	grains per 100 standard cubic feet
HAP .....	hazardous air pollutant
H/G/B .....	Houston/Galveston/Brazoria (nonattainment area)
H <sub>2</sub> S .....	hydrogen sulfide
ID No. ....	identification number
lb/hr .....	pound(s) per hour
MACT .....	Maximum Achievable Control Technology (40 CFR Part 63)
MMBtu/hr .....	Million British thermal units per hour
NA .....	nonattainment
N/A .....	not applicable
NADB .....	National Allowance Data Base
NESHAP .....	National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61)
NO <sub>x</sub> .....	nitrogen oxides
NSPS .....	New Source Performance Standard (40 CFR Part 60)
NSR .....	New Source Review
ORIS .....	Office of Regulatory Information Systems
Pb .....	lead
PBR .....	Permit By Rule
PEMS .....	predictive emissions monitoring system
PM .....	particulate matter
ppmv .....	parts per million by volume
PRO .....	process unit
PSD .....	prevention of significant deterioration
psia .....	pounds per square inch absolute
SIP .....	state implementation plan
SO <sub>2</sub> .....	sulfur dioxide
TCEQ .....	Texas Commission on Environmental Quality
TSP .....	total suspended particulate
TVP .....	true vapor pressure
U.S.C. ....	United States Code
VOC .....	volatile organic compound

**Appendix B**

**Major NSR Summary Table ..... 30**

Major NSR Summary Table

Permit Number: 9397 and PSDTX625M1					Issuance Date: January 31, 2019		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lb/hr	TPY**	Spec. Cond.	Spec. Cond.	Spec. Cond.
2	Electric Arc Furnace or Cupola 1 or Cupola 2	PM10	3.24	14.30	2, 3, 11, 12, 14	2, 11, 12, 14, 23	2, 12, 14
		NOx	12.85	52.06	11, 12	11, 12, 23	12
		CO	1477.00	4800.40	6, 11, 12, 13, 15, 16	6, 11, 12, 13, 15, 16, 23	12, 13, 15, 16
		SO2	149.81	487.00	11, 12, 13, 15, 16, 24	11, 12, 13, 15, 16, 23, 24	12, 13, 15, 16
		HF	0.57	2.10	11, 12	11, 12, 23	12
		H2S	15.70	57.60	6, 11, 12, 13	6, 11, 12, 13, 23	12, 13
		COS	19.87	75.82	6, 11, 12, 13	6, 11, 12, 13, 23	12, 13
		TRS	35.57	133.42	6, 11, 12, 15, 16, 24	6, 11, 12, 15, 16, 23, 24	12, 15, 16
		HCN	<0.01	0.03	11, 12	11, 12, 23	12
2	Electric Arc Furnace or Cupola 1 or Cupola 2 (5)	SO2	203.38	-	12	12, 23	12
		TRS	48.29	-	12	12, 23	12
3	Scrubber	PM10	21.20	80.90	3, 12, 14, 17, 19	12, 14, 17, 19, 23	12, 14, 21
		VOC	0.05	0.22	12	12	12
4	Material Handling (Includes Stockpiles)	PM	1.00	0.70	4, 12	8, 12, 23	12
		PM10	0.47	0.38	4, 12	8, 12, 23	12
5	Cupola Building Fugitives	PM10	<0.01	<0.01	4, 5, 12	5, 12, 23	12
		NOx	<0.01	<0.01	5, 12	5, 12, 23	12
		CO	0.15	0.47	5, 6, 12	5, 6, 12, 23	12

Permit Number: 9397 and PSDTX625M1					Issuance Date: January 31, 2019		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lb/hr	TPY**	Spec. Cond.	Spec. Cond.	Spec. Cond.
5	Cupola Building Fugitives	SO2	<0.01	0.04	5, 12	5, 12, 23	12
		HF	<0.01	<0.01	5, 12	5, 12, 23	12
		H2S	<0.01	<0.01	5, 6, 12	5, 6, 12, 23	12
		COS	<0.01	<0.01	5, 6, 12	5, 6, 12, 23	12
		TRS	<0.01	0.01	5, 6, 12	5, 6, 12, 23	12
		HCN	<0.01	<0.01	5, 12	5, 12, 23	12
6	Oil Storage Tank	VOC	1.82	<0.01	12	12	12

Footnotes:

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.

(2) Specific point source name. For fugitive sources use area name or fugitive source name.

(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code Section 101.1

- PM - total particulate matter, suspended in the atmosphere, including PM10 and PM2.5, as represented
- PM10 - total particulate matter equal to or less than 10 microns in diameter, including PM2.5, as represented
- NOx - total oxides of nitrogen
- CO - carbon monoxide
- SO2 - sulfur dioxide
- HF - hydrogen fluoride
- H2S - hydrogen sulfide
- COS - carbonyl sulfide
- TRS - total reduced sulfur
- HCN - hydrogen cyanide

(4) Fugitive emissions are an estimate only and should not be considered as a maximum allowable emission rate.

(5) Each cupola is authorized to produce white mineral wool, which uses feldspar instead of trap rock, for a total of 24 hours, for the sole purpose of determining the emission increases, if any, of SO2 and TRS.

(6) Planned startup and shutdown emissions are included. Maintenance activities are not authorized by this permit.

\* Emission rates are based on and the facilities are limited by the following maximum operating schedule:

Hrs/day 24 Days/week 7 Weeks/year 52

Jon Niermann, *Chairman*  
Emily Lindley, *Commissioner*  
Toby Baker, *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

January 31, 2019

MR JAMES DEIBEL  
MANAGER  
AMERICAN ROCKWOOL MANUFACTURING LLC  
1316 VILLAGE CREEK DR STE 600  
PLANO TX 75093-4461

Re: Permit Renewal  
Permit Number: 9397  
Expiration Date: January 31, 2029  
American Rockwool Manufacturing, LLC  
Mineral Wool Manufacturing Facility  
Nolanville, Bell County  
Regulated Entity Number: RN100215243  
Customer Reference Number: CN605129857  
Associated Permit Number: PSDTX625M1

Dear Mr. Deibel:

This is in response to your application Form PI-1R (General Application for Air Permit Renewals) concerning the proposed renewal of Permit Number 9397. Also, this will acknowledge that your application for the above-referenced renewal is technically complete as of January 15, 2019.

In accordance with Title 30 Texas Administrative Code Section 116.314(a), and based on our review, Permit Number 9397 is hereby renewed. In addition, with this permitting action, Permit by Rule Registration Number 48559 has been voided. Since you certified there were no changes to your existing permit, it is renewed as written and will be in effect for ten years from the date this renewal was issued. Please attach this letter, including the attachment regarding referenced authorizations, and new general conditions (permit face) to your permit. We appreciate your careful review of the special conditions of the permit and assuring that all requirements are consistently met.

You may file a **motion to overturn** with the Chief Clerk. A motion to overturn is a request for the commission to review the executive director's decision. Any motion must explain why the commission should review the executive director's decision. According to 30 TAC Section 50.139, an action by the executive director is not affected by a motion to overturn filed under this section unless expressly ordered by the commission.

A motion to overturn must be received by the Chief Clerk within 23 days after the date of this letter. An original and 7 copies of a motion must be filed with the Chief Clerk in person, or by mail to the Chief Clerk's address on the attached mailing list. On the same day the motion is transmitted to the Chief Clerk, please provide copies to the applicant, the executive director's attorney, and the Public Interest Counsel at the addresses listed on the attached mailing list. If a motion to overturn is not acted on by the commission within 45 days after the date of this letter, then the motion shall be deemed overruled.

You may also request **judicial review** of the executive director's approval. According to Texas Health and Safety Code Section 382.032, a person affected by the executive director's approval must file a petition appealing the executive director's approval in Travis County district court within 30 days after the **effective date of the approval**. Even if you request judicial review, you still must exhaust your



Mr. James Deibel  
Page 2  
January 31, 2019

Re: Permit Number: 9397

administrative remedies, which includes filing a motion to overturn in accordance with the previous paragraphs.

You are reminded that all maintenance activities at the site are required to be authorized and that each facility at the site must be in compliance with all rules and regulations of the Texas Commission on Environmental Quality (TCEQ) and of the U.S. Environmental Protection Agency at all times.

If you need further information or have any questions, please contact Ms. Anukriti Mahayan at (512) 239-0439 or write to the Texas Commission on Environmental Quality, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

This action is taken under authority delegated by the Executive Director of the TCEQ.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Wilson", with a stylized flourish at the end.

Michael Wilson, P.E., Director  
Air Permits Division  
Office of Air  
Texas Commission on Environmental Quality

Enclosure

cc: Air Section Manager, Region 9 - Waco

Project Number: 292470

**Permit No. 9397 – Authorizations Referenced on January 31, 2019**

This list includes authorizations referenced with the renewal of this permit. It is not intended to be all-inclusive and can be altered at the site without modification to the permit.

<b>Facility/Change</b>	<b>Authorization</b>	<b>Registration Number</b>
Mineral Wool Shot Sales Loading Facility (EPN: 4-26-RRCAR)	30 TAC §106.261: Facilities (Emission Limitations) and; 30 TAC §106.262: Facilities (Emission and Distance Limitations)	50933



## Texas Commission on Environmental Quality Air Quality Permit

*A Permit Is Hereby Issued To*  
**American Rockwool Manufacturing, LLC**  
*Authorizing the Continued Operation of*  
**Mineral Wool Manufacturing Facility**  
*Located at Nolanville, Bell County, Texas*  
*Latitude 31° 4' 26" Longitude -97° 34' 30"*

Permit: 9397 and PSDTX625M1

Issuance Date: January 31, 2019

Expiration Date: January 31, 2029

A handwritten signature in black ink, appearing to read "T. G. Baker", written over a horizontal line.

For the Commission

1. **Facilities** covered by this permit shall be constructed and operated as specified in the application for the permit. All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. Variations from these representations shall be unlawful unless the permit holder first makes application to the Texas Commission on Environmental Quality (commission) Executive Director to amend this permit in that regard and such amendment is approved. [Title 30 Texas Administrative Code (TAC) Section 116.116 (30 TAC § 116.116)]<sup>1</sup>
2. **Voiding of Permit.** A permit or permit amendment is automatically void if the holder fails to begin construction within 18 months of the date of issuance, discontinues construction for more than 18 months prior to completion, or fails to complete construction within a reasonable time. Upon request, the executive director may grant an 18-month extension. Before the extension is granted the permit may be subject to revision based on best available control technology, lowest achievable emission rate, and netting or offsets as applicable. One additional extension of up to 18 months may be granted if the permit holder demonstrates that emissions from the facility will comply with all rules and regulations of the commission, the intent of the Texas Clean Air Act (TCAA), including protection of the public's health and physical property; and (b)(1) the permit holder is a party to litigation not of the permit holder's initiation regarding the issuance of the permit; or (b)(2) the permit holder has spent, or committed to spend, at least 10 percent of the estimated total cost of the project up to a maximum of \$5 million. A permit holder granted an extension under subsection (b)(1) of this section may receive one subsequent extension if the permit holder meets the conditions of subsection (b)(2) of this section. [30 TAC § 116.120]
3. **Construction Progress.** Start of construction, construction interruptions exceeding 45 days, and completion of construction shall be reported to the appropriate regional office of the commission not later than 15 working days after occurrence of the event. [30 TAC § 116.115(b)(2)(A)]
4. **Start-up Notification.** The appropriate air program regional office shall be notified prior to the commencement of operations of the facilities authorized by the permit in such a manner that a representative of the commission may be present. The permit holder shall provide a separate notification for the commencement of operations for each unit of phased construction, which may involve a series of units commencing operations at different times. Prior to operation of the facilities authorized by the permit, the permit holder shall identify the source or sources of allowances to be utilized for compliance with Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program). [30 TAC § 116.115(b)(2)(B)]
5. **Sampling Requirements.** If sampling is required, the permit holder shall contact the commission's Office of Compliance and Enforcement prior to sampling to obtain the proper data forms and procedures. All sampling and testing procedures must be approved by the executive director and coordinated with the regional representatives of the commission. The permit holder is also responsible for providing sampling facilities and conducting the sampling operations or contracting with an independent sampling consultant. [30 TAC § 116.115(b)(2)(C)]
6. **Equivalency of Methods.** The permit holder must demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods, and monitoring methods proposed as alternatives to methods indicated in the conditions of the permit. Alternative methods shall be applied for in writing and must be reviewed and approved by the executive director prior to their use in fulfilling any requirements of the permit. [30 TAC § 116.115(b)(2)(D)]
7. **Recordkeeping.** The permit holder shall maintain a copy of the permit along with records containing the information and data sufficient to demonstrate compliance with the permit, including production records and operating hours;

keep all required records in a file at the plant site. If, however, the facility normally operates unattended, records shall be maintained at the nearest staffed location within Texas specified in the application; make the records available at the request of personnel from the commission or any air pollution control program having jurisdiction in a timely manner; comply with any additional recordkeeping requirements specified in special conditions in the permit; and retain information in the file for at least two years following the date that the information or data is obtained. [30 TAC § 116.115(b)(2)(E)]

8. **Maximum Allowable Emission Rates.** The total emissions of air contaminants from any of the sources of emissions must not exceed the values stated on the table attached to the permit entitled "Emission Sources--Maximum Allowable Emission Rates." [30 TAC § 116.115(b)(2)(F)] <sup>1</sup>
9. **Maintenance of Emission Control.** The permitted facilities shall not be operated unless all air pollution emission capture and abatement equipment is maintained in good working order and operating properly during normal facility operations. The permit holder shall provide notification in accordance with 30 TAC §101.201, 101.211, and 101.221 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements; and Operational Requirements). [30 TAC § 116.115(b)(2)(G)]
10. **Compliance with Rules.** Acceptance of a permit by an applicant constitutes an acknowledgment and agreement that the permit holder will comply with all rules and orders of the commission issued in conformity with the TCAA and the conditions precedent to the granting of the permit. If more than one state or federal rule or regulation or permit condition is applicable, the most stringent limit or condition shall govern and be the standard by which compliance shall be demonstrated. Acceptance includes consent to the entrance of commission employees and agents into the permitted premises at reasonable times to investigate conditions relating to the emission or concentration of air contaminants, including compliance with the permit. [30 TAC § 116.115(b)(2)(H)]
11. **This** permit may not be transferred, assigned, or conveyed by the holder except as provided by rule. [30 TAC § 116.110(e)]
12. **There** may be additional special conditions attached to a permit upon issuance or modification of the permit. Such conditions in a permit may be more restrictive than the requirements of Title 30 of the Texas Administrative Code. [30 TAC § 116.115(c)]
13. **Emissions** from this facility must not cause or contribute to "air pollution" as defined in Texas Health and Safety Code (THSC) §382.003(3) or violate THSC § 382.085. If the executive director determines that such a condition or violation occurs, the holder shall implement additional abatement measures as necessary to control or prevent the condition or violation.
14. **The** permit holder shall comply with all the requirements of this permit. Emissions that exceed the limits of this permit are not authorized and are violations of this permit. <sup>1</sup>

<sup>1</sup> Please be advised that the requirements of this provision of the general conditions may not be applicable to greenhouse gas emissions.

## Special Conditions

Permit Numbers 9397 and PSDTX625M1

### Emission Standards

1. This permit authorizes those sources of emissions listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates," and those sources are limited to the emission rates and other conditions specified in the table. In addition, this permit authorizes all emissions from planned startup and shutdown activities associated with facilities or groups of facilities that are authorized by this permit. **(01/13)**

### Federal Applicability

2. The plant covered under this permit shall comply with all applicable requirements of the U.S. Environmental Protection Agency (EPA) National Standards for Hazardous Air Pollutants for Source Categories existing for Mineral Wool Production in the Title 40 Code of Federal Regulations (40 CFR) Part 63, Subparts A and DDD. **(8/99)**

### Opacity/Visible Emission Limitations

3. In accordance with EPA Test Method 9 or equivalent, and except for those periods described in Title 30 Texas Administrative Code §§ 101.201 and 101.211 (30 TAC §§ 101.201 and 101.211), the opacity of emissions from fabric filter baghouses and scrubbers listed in the permit shall not exceed 10 percent averaged over a six-minute period. **(6/08)**
4. As determined by a trained opacity observer, no visible emissions from material handling operations or from the plant buildings shall leave the plant property boundary. **(10/98)**

### Operational Limitations, Work Practices, and Plant Design

5. In order to comply with represented emission limits and off-property impacts, the facility is limited to operating only one cupola at any time after December 28, 1999. Except as provided in Special Condition No. 13, under no circumstances shall both cupolas be operated at the same time after December 28, 1999. **(8/99)**
6. Each cupola shall be fitted with and use an oxygen (O<sub>2</sub>) injection system for the purpose of reducing emissions of carbon monoxide (CO) and total reduced sulfur compounds (TRS): hydrogen sulfide (H<sub>2</sub>S), carbonyl sulfide (COS), and carbon disulfide. The O<sub>2</sub> injection rate shall be maintained at a minimum flow rate of 38 standard cubic feet per minute during normal cupola operation.

Normal cupola operation does not include periods of cupola start-up, shutdown, maintenance, or periods when the O<sub>2</sub> injection system flow measurement devices are being calibrated. Depending on stack sampling results, the minimum O<sub>2</sub> injection rate may be increased in order to ensure that emissions of CO and TRS comply with the emission limitations specified in the maximum allowable emissions rate table (MAERT). **(11/04)**

Special Conditions

Permit Numbers 9397 and PSDTX625M1

Page 2

7. Plant roads, truck load-out areas, and truck trailer parking areas shall be paved or sprinkled with water or chemicals, as necessary, to control dust emissions. Front-end loader traffic areas and material stockpiles shall be sprinkled with water and/or chemicals as necessary to control dust emissions. **(10/98)**
8. The railcar unloading rate shall be limited to 100 tons per hour, based on an eight-hour shift average. A permanent windbreak that partially encloses the railcar unloading system shall be installed and maintained to minimize the generation of windborne particulate emissions. **(10/98)**
9. With the exception of the transfer of material from the baghouse to the shot piles, water sprays shall be installed and operated at the raw material and fuel screens and all material handling transfer points in order to prevent visible emissions. **(10/98)**
10. Dust removed from the cupola baghouse shall be handled and transferred to the slag (shot) pile in a manner that will minimize visible emissions. **(10/98)**
11. The facility shall have a maximum charge rate of 13,700 pounds per hour (lb/hr), based on a daily average, of raw material and recyclable material (shot) to each cupola and a maximum charge rate of 13,700 lb/hr, based on a daily average, of raw and recyclable material (shot) to the electric arc furnace (EAF). **(8/99)**

Initial Determination of Compliance

12. Prior to start-up of the EAF, the holder of this permit shall submit to the TCEQ Executive Director, or his representative, certification documenting that the facilities or facility changes authorized by the permit have been completed as represented in the permit application. **(10/98)**.
13. Upon request of the TCEQ Executive Director the holder of this permit shall perform stack sampling and other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the operation of the cupolas and EAF as authorized by this permit. Sampling of the cupolas shall occur subsequent to the use of O<sub>2</sub> injection and during a period when the EAF is not operating. Sampling of the EAF shall occur during a period when the cupolas are not operating. The holder of this permit is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. **(10/98)**
  - A. The appropriate TCEQ Regional Office in the region where the source is located shall be contacted as soon as testing is scheduled, but not less than 45 days prior to sampling to schedule a pretest meeting.

The notice shall include:

- (1) Date for pretest meeting.
- (2) Date sampling will occur.
- (3) Name of firm conducting sampling.

- (4) Type of sampling equipment to be used.
- (5) Method or procedure to be used in sampling.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for submitting the test reports.

A written proposed description of any deviation from sampling procedures specified in permit conditions or the TCEQ or EPA sampling procedures shall be made available to the TCEQ prior to the pretest meeting. The TCEQ Regional Director shall approve or disapprove of any deviation from specified sampling procedures.

Requests to waive testing for any pollutant specified in B of this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate/equivalent procedure proposals for New Source Performance Standard testing which must have the EPA approval shall be submitted to the TCEQ Austin Compliance Support Division. **(11/04)**

- B. Air contaminants emitted from the cupolas to be tested for include (but are not limited to) CO, sulfur dioxide (SO<sub>2</sub>), H<sub>2</sub>S, and COS. Air contaminants emitted from the EAF to be tested for include (but are not limited to) CO, SO<sub>2</sub>, H<sub>2</sub>S, and COS.
- C. Sampling of the EAF shall occur within 60 days after initial start-up of the EAF. Additional sampling of the EAF and/or cupolas shall occur at such other times as may be required by the Executive Director of the TCEQ. Requests for additional time to perform sampling shall be submitted to the TCEQ Regional Office. Additional time to comply with the applicable requirements of 40 CFR Part 60 and 40 CFR Part 61 requires the EPA approval, and requests shall be submitted to the TCEQ Regional Office.
- D. The plant shall operate at maximum production rates during stack emission testing. Primary operating parameters that enable determination of production rate shall be monitored and recorded during the stack test. These parameters are to be determined at the pretest meeting. The plant shall also document all operational parameters, such as exhaust fan speed, exhaust damper settings, that may affect the exhaust flow from the cupola and EAF stacks. If the plant is unable to operate at maximum rates during testing, then future production rates may be limited to the rates established during testing. Additional stack testing may be required when higher production rates are achieved.
- E. Three copies of the final sampling report shall be forwarded to the TCEQ within 30 days after sampling is completed. Sampling reports shall comply with the attached provisions of Chapter 14 of the TCEQ Sampling Procedures Manual.

The sampling report shall also include the following:

- (1) Plant production rate during tests.

- (2) Fuel type and consumption rates during tests.
- (3) Amount and type of raw materials charged to the cupolas and EAF.
- (4) Listing and amounts of all air contaminants emitted from the combined stack exhaust from the cupolas and EAF.
- (5) Listing and amounts of additives that are introduced into the process either during the combustion stage or treatment of the exhaust matter prior to emitting from this single stack.
- (6) Amount of sulfur in raw materials and fuel.
- (7) The O<sub>2</sub> injection rates.

The reports shall be distributed as follows:

One copy to the TCEQ Waco Regional Office.

One copy to the EPA Region 6, Air Enforcement Branch, Dallas. **(11/04)**

#### Continuous Determination of Compliance

- 14. Upon being informed by the TCEQ Executive Director that the staff has documented visible emissions from these facilities exceeding ten percent opacity (when adjusted for water vapor, averaged over six consecutive minutes) and upon request of the TCEQ, the holder of this permit shall conduct stack sampling analyses to prove satisfactory equipment performance and compliance with the conditions of this permit. Sampling must be conducted in accordance with appropriate procedures of the TCEQ Sampling Procedures Manual or in accordance with applicable EPA Code of Federal Regulations procedures. Any deviation from these procedures must be approved by the TCEQ Executive Director prior to sampling.
- 15. Within 180 days of the issuance of this permit amendment, the holder of this permit shall install, calibrate, and maintain continuous emissions monitoring systems (CEMS) to individually measure and record the in-stack concentration of CO, SO<sub>2</sub>, and TRS from the cupolas and EAF. **(10/98)**
  - A. The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B. If there are no applicable performance specifications in 40 CFR Part 60, Appendix B, contact the TCEQ Office of Air, Air Permits Division in Austin for requirements to be met.

Notification of CEMS certification testing, including a complete test plan, shall be submitted to the appropriate TCEQ Regional Office at least 45 days prior to the scheduled testing.

- B. The system shall be zeroed and spanned daily and corrective action taken when the 24-hour span drift exceeds two times the amounts specified in the applicable



Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B, or as specified by the TCEQ if not specified in Appendix B. Zero and span is not required on weekends and plant holidays if instrument technicians are not normally scheduled on those days.

Each monitor shall be quality-assured at least quarterly using cylinder gas audits (CGA) in accordance with 40 CFR Part 60, Appendix F, Procedure 1, Section 5.1.2, with the following exception: an independent relative accuracy test audit is not required once every four quarters (i.e., four successive quarterly CGA may be conducted), but is required at least once a year. An equivalent quality-assurance method approved by the TCEQ may also be used. Successive quarterly audits shall occur no closer than two months.

All CGA exceedances of  $\pm 15$  percent accuracy and any CEMS downtime shall be reported to the appropriate TCEQ Regional Director, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Director.

- C. The monitoring data shall be reduced to hourly average concentrations at least once every four hours using a minimum of four equally-spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of the permit allowable emission rate in lb/hr at least once every day.
  - D. All monitoring data and quality-assurance data shall be maintained by the source for a period of two years and shall be made available to the TCEQ Executive Director or his designated representative upon request. The data from the CEMS may, at the discretion of the TCEQ, be used to determine compliance with the conditions of this permit.
16. As an alternative to the CEMS requirements in Special Condition No. 15 and upon review and approval of the TCEQ Waco Regional Office, the holder of this permit may implement a Compliance Assurance Monitoring Plan (CAMP) for the purpose of demonstrating compliance with the emissions limits specified in the attached MAERT. **(10/98)**
- A. Within 60 days after issuance of the permit amendment to install the EAF, the holder of this permit must submit a CAMP to the TCEQ Waco Regional Office detailing:
    - (1) The specific operating conditions to be monitored, sampled, and/or recorded;
    - (2) The theoretical determined relationship between these operating parameters and the emission rates of CO, SO<sub>2</sub>, and TRS;
    - (3) The data and information used to identify the relationship between the emission rates and the operating conditions;
    - (4) How the operating conditions will be monitored on an hourly, daily, or other period during operation of the facility;
    - (5) The quality assurance and quality control procedures that will be employed to ensure that the data generated by monitoring these operating conditions will be representative and accurate; and

- (6) The type and format of the operating condition records that will be maintained.
- B. The requirements of this plan shall become effective immediately upon start-up of the EAF. The holder of this permit will conduct all baseline testing in support of the CAMP in conjunction with the emissions testing specified in Special Condition No. 13.

An updated plan incorporating the testing results and documenting the determined emissions rates correlations for CO, SO<sub>2</sub>, and TRS shall be submitted to the TCEQ within 60 days after completion of the testing.

- C. At a minimum, the quality assurance procedures in the plan shall include independent emissions testing, using acceptable EPA Reference Test Methods, to verify the accuracy of the CAMP and previously established emissions rates correlations. The emissions rates predicted by the CAMP shall be greater than or equal to 90 percent of the values obtained through the EPA Reference Method testing if the CAMP is to be used in lieu of the CEMS specified in Special Condition No. 15.
- D. After the initial compliance test, as specified in Special Condition No. 13, the holder shall conduct quarterly sampling for the next four consecutive calendar quarters. If the required accuracy, as stated above, is not achieved in any quarter, the permit holder shall make and record the necessary adjustments to bring the predicted emissions within the acceptable range by the next quarterly sampling. If the CAMP cannot be proven to be within the required accuracy limit for two consecutive quarters, the permit holder shall install the CEMS as provided in Special Condition No. 15, within 90 days of the last failed verification test.

If the CAMP provides reliable data throughout four consecutive quarters of testing and provides the accuracy requirement as described above, the testing schedule can be changed to a semi-annual basis. If the CAMP provides reliable data for two consecutive semi-annual periods and provides the accuracy requirement as described above, the testing schedule can be changed to an annual basis. If the CAMP provides reliable data for two consecutive annual periods and provides the accuracy requirement as described above, the testing schedule can be changed to a biennial basis. If the CAMP does not provide reliable data during any of the required sampling periods, the testing schedule shall revert back to a quarterly basis. The schedule of subsequent testing can be adjusted as outlined above. **(06/12)**

An inactive cupola furnace need not be operated solely to conduct the compliance testing. However, it must be tested within 2,190 hours of operation or at the next scheduled sampling period, whichever comes first. **(06/12)**

If the CAMP produces viable data for emissions rates of the stated contaminants, these rates shall be used directly for the determination of compliance with the limits set out in the attached MAERT. Otherwise, a certified CEMS, as specified in Special Condition No. 15, will be used as the tool for continual compliance determination.

Monitoring

17. The holder of this permit shall install, calibrate, and maintain a device to monitor and record the liquid flow rate in the wet scrubber. The monitoring device shall be calibrated in accordance with the manufacturer's specifications and shall be calibrated at least annually and shall be accurate within a range of  $\pm 5\%$  of design liquid flow rate; or  $\pm 2\%$  of span.

The minimum liquid flow rate shall be maintained at (or above) 245 gallons per minute. The actual liquid flow rate shall be recorded at least once per day. **(6/08)**

18. The holder of this permit may elect to collect monitoring data on a more frequent basis and average the data, consistent with the averaging times specified, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis. In no event shall data be collected and used in particular instances in order to avoid reporting deviations. All monitoring data shall be collected in accordance with the requirements specified in 40 CFR § 64.7(c). **(6/08)**
19. The holder of this permit shall perform monthly inspections to verify proper operation of the capture system to verify there are no holes, cracks and/or other conditions that would reduce the collection efficiency of the emission capture system as represented. If the results of the inspections indicate that the capture system is not operating properly, the permit holder shall promptly take necessary corrective actions. **(6/08)**
20. The control device shall not have a bypass. **(6/08)**
21. The TCEQ Regional Office shall be notified as soon as possible after the discovery of any monitor malfunction, which is expected to result in more than 24 hours of lost data. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Director in case of extended monitor downtime. Necessary corrective action shall be taken if the downtime exceeds 5 percent of the Scrubber (EPN 3) operating hours in the quarter. Failure to complete any corrective action as directed by the TCEQ Regional Office may be deemed a violation of the permit. **(6/08)**
22. The required liquid flow rate monitoring equipment shall be installed, tested, undergo final verification, and begin collecting data within 180 days after issuance of this permit. **(9/08)**

Recordkeeping Requirements

23. In addition to the recordkeeping requirements specified in the general conditions, the following records shall be maintained on-site for a rolling two-year period made available upon request to representatives of the TCEQ or any other air pollution controls program having jurisdiction: **(6/08)**
  - A. State which cupola is operating, including date and time.
  - B. Hourly charge rates of raw material, fuel, and additives being charged to the cupolas.
  - C. Hourly charge rates of raw material, shot, and additives being charged to the EAF.

- D. Amount of O<sub>2</sub> injected into the cupolas in standard cubic feet per minute and based on a continuous basis.
- E. Amount of sulfur in the raw material and fuel being charged to cupolas and EAF. The amount of sulfur shall be determined for each delivery of raw material and fuel delivered to the plant site. With approval from the TCEQ Regional Director, the frequency of determining sulfur content can be reduced to occur only after a change in the source of raw material. If a CEMS is installed and operated as specified in Special Condition No. 14, sulfur content measurements and recordkeeping are not required.
- F. Total production rate of mineral wool in lb/hr.
- G. Unloading rates of raw material and fuel from railcars.
- H. All monitoring data and support information as specified in 30 TAC §122.144; and
- I. Inspections of capture systems and abatement devices shall be recorded as they occur.

Operational Requirements for White Wool Production

24. The holder of this permit is authorized to produce white mineral wool, based on representations made in support of the testing request letter submitted by the holder on January 9, 2002, for the sole purpose of determining the emissions increases, if any, of SO<sub>2</sub> and TRS from the cupolas.

Each cupola may produce white mineral wool for a total production period not to exceed 24 hours each and documentation of feed rates shall comply with the requirements of Special Condition No. 23. The testing must be completed within six months of the date of this condition and shall be performed in accordance with the requirements specified in Special Condition No. 13.

The holder of this permit shall keep and maintain records of the total time that white wool is produced from each cupola and make these records available to TCEQ representatives upon request. **(1/02)**

Dated January 22, 2013

## Emission Sources - Maximum Allowable Emission Rates

Permit Number 9397 and PSDTX625M1

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

### Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates (6) *	
			lbs/hour	TPY
2	Electric Arc Furnace or Cupola 1 or Cupola 2	PM <sub>10</sub>	3.24	14.30
		NO <sub>x</sub>	12.85	52.06
		CO	1477.00	4800.40
		SO <sub>2</sub>	149.81	487.80
		HF	0.57	2.10
		H <sub>2</sub> S	15.70	57.60
		COS	19.87	75.82
		TRS	35.57	133.42
		HCN	< 0.01	0.03
2	Electric Arc Furnace or Cupola 1 or Cupola 2 (5)	SO <sub>2</sub>	203.38	--
		TRS	48.29	--
3	Scrubber	PM <sub>10</sub>	21.20	80.90
		VOC	0.05	0.22
4	Material Handling (includes stockpiles)	PM	1.00	0.70
		PM <sub>10</sub>	0.47	0.38
5	Cupola Building Fugitives	PM <sub>10</sub>	< 0.01	< 0.01
		NO <sub>x</sub>	< 0.01	< 0.01
		CO	0.15	0.47
5	Cupola Building Fugitives	SO <sub>2</sub>	< 0.01	0.04
		HF	< 0.01	< 0.01
		H <sub>2</sub> S	< 0.01	< 0.01
		COS	< 0.01	< 0.01
		TRS	< 0.01	0.01

## Emission Sources – Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates (6) *	
			lbs/hour	TPY
		HCN	< 0.01	< 0.01
6	Oil Storage Tank	VOC	1.82	< 0.01

- (1) Emission point identification - either specific equipment designation or emission point number from plot plan.
- (2) Specific point source name. For fugitive sources use area name or fugitive source name.
- (3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code Section 101.1
- PM - total particulate matter, suspended in the atmosphere, including PM<sub>10</sub> and PM<sub>2.5</sub>, as represented
- PM<sub>10</sub> - total particulate matter equal to or less than 10 microns in diameter, including PM<sub>2.5</sub>, as represented
- NO<sub>x</sub> - total oxides of nitrogen
- CO - carbon monoxide
- SO<sub>2</sub> - sulfur dioxide
- HF - hydrogen fluoride
- H<sub>2</sub>S - hydrogen sulfide
- COS - carbonyl sulfide
- TRS - total reduced sulfur
- HCN - hydrogen cyanide
- (4) Fugitive emissions are an estimate only and should not be considered as a maximum allowable emission rate.
- (5) Each cupola is authorized to produce white mineral wool, which uses feldspar instead of trap rock, for a total of 24 hours, for the sole purpose of determining the emission increases, if any, of SO<sub>2</sub> and TRS.
- (6) Planned startup and shutdown emissions are included. Maintenance activities are not authorized by this permit.

\* Emission rates are based on and the facilities are limited by the following maximum operating schedule:

Hrs/day 24 Days/week 7 Weeks/year 52

Date: January 22, 2013