Exhibit 96.1

NATURAL RESOURCE PARTNERS

TECHNICAL REPORT SUMMARY

STATEMENT OF RESOURCES AND RESERVES
CURRENT AS OF
DECEMBER 31, 2024

BIG ISLAND MINE

SWEETWATER COUNTY
WYOMING, USA

FINAL
2B
(29-24-001)

FEBRUARY 27, 2025

PREPARED BY:

HOLLBERG PROFESSIONAL GROUP, PC
Consulting Mining Engineers
Green River Wyoming

Hollberg Professional Group, PC

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Glossary of Terms and Abbreviations		
Term/Abbreviation	**Description**	**Definition**
BIM	Big Island Mine	Şişecam's Mine Workings
CAPEX	Capital Expenditures	Expenditures that are not charged to production costs but are either depreciated or amortized.
Conventional mining methods	Drill and Blast Mining	Mining drill and blast methods or undercut, drill and blast mining.
CM	Continuous Miner	Mining using continuous mining machines. These can be drum type or rotor type.
Crosscut (X-Cut)	underground passageway	Mined at or near right angles to the mining direction
DECA	Decahydrate Crystal	Sodium Carbonate Decahydrate
EIS	Environmental Impact Statement	A specific study of a project's environmental impacts.
FOB	Free-on-Board	Basis of selling cargo excluding freight and insurance but including loading costs.
GR RMP	Green River Resource Management Plan	Resource plan produced by the BLM for management of the multiple resources on BLM lands in the Green River area.
GDP	Gross Domestic Product	The total value of all goods and services produced within a country over a specific period of time
Gate Entry	Longwall Entry	Access entries specifically configured to support longwall mining.
Headgate	Longwall Entry	Longwall gate entry on fresh air side of longwall face containing main access facilities and conveyors.
IRR	Internal Rate of Return	An annual rate of growth that an investment is expected to generate.
JICOG	Joint Industry Committee on Oil and Gas	Committee created to help resolve lease conflicts in the KSLA between oil and gas producers and sodium mineral producers.
JORC	Joint Ore Reserve Committee	Part of the Australian Institute of Mining and Metallurgy issuing internationally recognized criteria for defining trona resource and reserves.
JV	Joint Venture	A combination of two or more parties that seek the development of a single enterprise or project for profit
KSLA	Known Sodium Lease Area	Area in Southwest Wyoming designated for sodium mineral leasing
K gal	1000 gallons	Raw water measurement
LB	Lower Bed	Trona Bed 24
LW	Longwall	Highly productive method of underground trona mining and a specific type of trona mining equipment.
LOM	Life of Mine Plan	Mining plan for the life of the property.
NPV	Net Present Value	The present value of the expected future cash flows minus the cost.
OPEX	Operating Expenses	Expenses for labor and expendable items used in the mining and processing of minerals.

Glossary of Terms and Abbreviations		
Term/Abbreviation	**Description**	**Definition**
O&G	Oil and Gas Production	The production of oil and gas from the surface.
MST	Million Short Tons	Million short tons of material.
MTPY	Million Short Tons per Year	Million short tons of material per year.
Mono	Monohydrate Process	Process to convert trona to soda ash
MMTA	Mechanically Mining Trona Area	Area designated by the BLM in southwest Wyoming that can be mechanically mined.
MM gallons	Million Gallons	Raw water measurement
MRE	Mineral Resource Estimate	Mineral Resource Estimate
RCRA	Resource Conservation and Recovery Act	Regulation of identification and regulation of hazardous waste
ROM Trona	Run-of-Mine Trona	Raw trona production from mines prior to trona preparation.
RS RMP	Rock Springs Resource Management Plan	Resource plan produced by the BLM for management of the multiple resources on BLM lands in the Rock Springs, Wyoming District.
RFDS	Reasonably Foreseeable Development Scenario	BLM study to determine a resource's probability of development in the foreseeable future.
SSDA	Special Sodium Drilling Area	Area designated under the 1997 Green River Resource Management Plan to limit O&G drilling
TA	Total Alkalinity	Measure of soda ash level in solution mine water.
TSA	Short Tons of Soda Ash	Measure of production capacity
Tons	Short Tons	All references to "tons" in this report shall refer to "short tons." A short ton is equal to 2000 pounds.
tph	tons per day	Measure of production capacity.
tph	tons per hour	Measure of production capacity.
types	tons per unit shift	Measure of mining productivity.
toy	tons per year	Measure of production capacity.
TRM	Tailings Return to the Mine	The process by which the refinery tailings are thickened and pumped into old mine workings for disposal.
UB	Upper Bed	Trona Bed 25
USGS	United States Geologic Survey	Branch of the US Government charged with mapping and surveying the resources of the US.

APPROACH

Hollberg Professional Group, PC ("HPG") has conducted an independent technical review of the lands held by Şişecam Wyoming, LLC ("Şişecam Wyoming") referred to as the "Big Island Mine," which is located in the area commonly referred to as the Know Sodium Lease Area (the "KSLA"), near the town of Green River, Sweetwater County, Wyoming. HPG professionals involved in the preparation of this independent technical report ("Report") have visited the mine on multiple occasions and are knowledgeable concerning the Big Island Mine and the KSLA trona deposits. HPG has reviewed technical data, reports, and studies produced by other consulting firms, as well as information provided by Şişecam Wyoming, and others listed in Sections 24.0 and 25.0. This review was conducted on a reasonableness basis, and HPG has noted herein where such provided information engendered questions. Except for the instances in which we have noted questions or made specific comments regarding the nature of the information, HPG considers the information provided by Şişecam as being accurate and suitable for use in this Report. Consent has been given for the distribution of this independent technical review in the form and context in which it appears. HPG has no reason to doubt the authenticity or substance of the information provided.

INDEPENDENCE

HPG and its principals and employees are not and do not intend to be a director, officer, or other direct employee of Şişecam Wyoming and has no material interest in the Big Island Mine or Şişecam Wyoming. The relationship with Şişecam Wyoming is solely one of professional association between client and independent consultant. The review work and this Report are prepared in return for professional fees based upon agreed commercial rates, and the payment of these fees is in no way contingent on the results of this Report.

ELECTRONIC DISCLAIMER

Electronic mail copies of this Report are not official unless authenticated and signed by HPG and are not to be modified in any manner without HPG's express written consent.

UNITS OF MEASUREMENT AND CURRENCY

Measurement units used in this Report are in the English system. The currency is United States (US) dollars unless specifically stated otherwise.

NOTE REGARDING FORWARD-LOOKING INFORMATION

This Technical Report Summary contains forward-looking statements within the meaning of the U.S. Securities Act of 1933 and the U.S. Securities Exchange Act of 1934, that are intended to be covered by the safe harbor created by such sections. Such forward-looking statements include, without limitation, statements regarding Hollberg Professional Group's (HPG) expectation for Şişecam's mine and any related development or expansions, including estimated cashflows, production forecasts, mine plans, revenue, income, costs, taxes, capital, rates of return, mine, material mined and processed, recoveries and grade, future mineralization, future adjustments and sensitivities and other statements that are not historical facts.

Forward-looking statements address activities, events, or developments that HPG expects or anticipates will or may occur in the future and are based on current expectations and assumptions. Although Hollberg Professional Group believes that its expectations are based on reasonable assumptions, it can give no assurance that these expectations will prove correct. Such assumptions, include, but are not limited to: (i) there being no significant change to current geotechnical, trona bed thickness, trona grades, hydrological and other physical conditions; (ii) permitting, development, operations and expansion of operations and projects being consistent with current expectations and mine plans; (iii) political developments in jurisdiction in which Şişecam Wyoming operates being consistent with current expectations; (iv) certain exchange rate assumptions being approximately consistent with current levels; (v) certain price assumptions for soda ash; (vi) prices for key supplies being approximately consistent with current levels; and (vii) other planning assumptions.

Important factors that could cause actual results to differ materially from those in the forward-looking statements include, among others, risks that estimates of mineral reserves and mineral resources are uncertain and the volume and grade of ore actually recovered may vary from our estimates, risks relating to fluctuations in soda ash prices; risks due to the inherently hazardous nature of mining-related activities; risks related to the jurisdictions in which Şişecam operates, uncertainties due to health and safety considerations, including pandemics, uncertainties related to environmental considerations, including, without limitation, climate change, uncertainties relating to obtaining approvals and permits, including renewals, from governmental regulatory authorities; and uncertainties related to changes in law; as well as those factors discussed in NRP's filings with the U.S. Securities and Exchange Commission, including NRP's latest Annual Report on Form 10-K for the period ended December 31, 2023.

This notice is an integral component of the Technical Report Summary (TRS) and should be read in its entirety and must accompany every copy made of the TRS.

HPG has used their experience and industry expertise to produce the estimates in the TRS. Where HPG has made these estimates, they are subject to qualifications and assumptions, and it should also be noted that all estimates contained in the TRS may be prone to fluctuations with time and changing industry circumstances.

HPG
Hollberg Professional Group PC.
Consulting Engineers

Kurt F. Hollberg, PE
Hollberg Professional Group, PC

QUALIFIED PERSON

I, Kurt F. Hollberg, certify as the Qualified Person that the attached report titled “Statement of Resources and Reserves as of December 31, 2024– Big Island Mine, Sweetwater County, Wyoming, USA” and dated February 20, 2025 (the "Technical Report Summary") by Hollberg Professional Group PC has been carried out in accordance with the requirements of US Securities and Exchange Commission (SEC Regulation S-K Item 102 and Subpart 1300).

Dated February 27, 2025

/s/Kurt F Hollberg
Signature of Qualified Person
Electronic Signature

Kurt F. Hollberg, PE
Qualified Person

Professional Engineer (Mining) KURT F. HOLLBERG 6599 Date WYOMING
/s/Kurt F. Hollberg
Electronic Signature
31-DEC-2025

SME
Society for Mining, Metallurgy & Exploration
Kurt F. Hollberg
SME Registered Member No. 1475226
Signature /s/Kurt F. Hollberg
Date Signed 27-FEB-2025
Expiration date 31-DEC-2025
Electronic Signature

1.0 EXECUTIVE SUMMARY

1.1 BACKGROUND

Natural Resource Partners LP (“NRP”), engaged Hollberg Professional Group (HPG) to update HPG’s December 2021 Technical Report Summary on the trona mineral assets of Şişecam Wyoming LLC (“SCW”) comprising Şişecam’s Green River Property (Big Island Mine & Refinery), Sweetwater County, Wyoming, United States of America (“USA”). Şişecam Wyoming is owned by Şişecam Chemicals Wyoming LLC (SCW LLC) 51% and by NRP Trona LLC ("NRP Trona") 49%. NRP Trona LLC is a wholly owned subsidiary of NRP. Natural Resource Partners LP is the registrant.

1.2 HISTORY

Şişecam Wyoming owns and operates the Big Island Mine complex that consists of an underground trona mine and associated refinery (“Şişecam Wyoming Mine and Refinery”). The Şişecam Wyoming Mine and Refinery lies northwest of the town of Green River in Sweetwater County, Wyoming (Figure 3.1). Mining occurs in two trona seams, Bed 24 and Bed 25, nominally at 850-feet and 900-feet deep, respectively. The Big Island Mine was started in 1962 by the Stauffer Chemical Company and has been in continuous operation since that time. In 1985, the Big Island Mine and Refinery was acquired by Chesebrough Ponds and changed ownership several times over the next few years, first to Imperial Chemical Industries in 1986 and a year later, to Rhone-Poulenc. In 1996, Rhone-Poulenc sold its interest in the soda ash business to OCI Company, LTD, later renamed OCI Chemical Corporation. In September of 2013, OCI announced its Initial Public Offering (IPO) on the NYSE under ‘OCIR’, a master limited partnership. In 2015, Ciner Enterprises Inc., a subsidiary of Ciner Group, acquired OCI Chemical Corporation. The company was renamed Ciner Resources Corporation. In 2021, Ciner Group sold 60% of its US soda ash business to Şişecam Chemicals and the company was renamed to Şişecam Resources LP.

In 2023, Şişecam Resources LP was dissolved and Şişecam Chemicals Wyoming LLC ("SCW LLC") became the direct owner of 51% of Şişecam Wyoming. SCW LLC, the operating partner, controls and operates Şişecam Wyoming with non-operating ownership of 49% by NRP Trona. SCW LLC is 100% owned by Şişecam Chemicals Resources LLC ("Şişecam Chemicals,") which is 100% owned by Şişecam USA Inc. ("Şişecam USA"). Şişecam USA is a direct wholly-owned subsidiary of Türkiye Şişe ve Cam Fabrikalari A.Ş, a Turkish Corporation ("Şişecam Parent"), which is an approximately 51%-owned subsidiary of Turkiye Is Bankasi Turkiye Is Bankasi ("Isbank").

The Şişecam Wyoming refinery purifies trona ore into soda ash (sodium carbonate). Soda ash is an essential raw material in glass making, chemicals, detergents, and other industrial products. Şişecam Wyoming’s refining facility is well established and has been converting trona into salable soda ash for over 60 years. Şişecam Wyoming sells the soda ash domestically through Şişecam Chemicals Wyoming LLC ("SCW LLC") and its affiliates. Product is shipped via truck or rail from loadouts at the Şişecam site and a rail spur to the Union Pacific Railroad mainline along Interstate 80 (I-80).

Şişecam Parent was founded over 88 years ago, is based in Türkiye and is one of the largest industrial publicly-listed companies on the Istanbul exchange. Şişecam has operations in 14 countries on four continents. ‘It ranks among the world’s top two producers in glassware, and among the top five global producers in glass packaging and flat glass. Şişecam is also one of top three largest producers of soda ash and a world leader in chromium chemicals.’ (Şişecam Website).

The Big Island Mine has been in continuous operation since 1962 producing over 183.3 MST of trona ore from Beds 24 and Bed 25 as of December 31, 2024.

1.3 PROPERTY DESCRIPTION

Şişecam Wyoming's facility is located approximately 23 miles north of the City of Green River in Sweetwater County. The facility includes the processing and refinement of Trona ore into Soda Ash, an underground mine (Big Island Mine), ore hoist, mine fans, surface tailings disposal ponds, evaporation ponds, sewer ponds, site containment ponds, and administration and supporting structures.

Access to Şişecam Wyoming is by County Highway 6 from Wyoming Highway 372 and County Highway 4. Union Pacific Railroad provides a rail spur to transport products. Adjoining this spur is a rail holding yard adjacent to WY 372. Figure 3.1 through Figure 3.5 show the location, sodium leasing area as well as the surface and mineral ownership.

Şişecam is located in the semi-arid high plateau region of southwestern Wyoming at elevations between 6,200 and 6,600-feet above mean sea level (MSL). Only about one percent (1%) of the land is barren, but the short growing season, rugged topography, poor soils, and limited availability of precipitation make vegetation rather sparse in both variety and productivity.

The Şişecam property is crossed by the Green River which is a primary tributary to the Colorado River and located in the Upper Green Slate Watershed and designated Class 2AB waterway.

The site infrastructure is established and adequate for the purposes including: four existing surface to ore bed shafts, offices, warehouses, processing plants, product storage, dedicated rail spur with rail yard, tailings facilities, and dedicate utilities including natural gas, electricity, and water.

The Şişecam site is serviced by a dedicated railroad spur line off the main East West Union Pacific rail line. Şişecam's spur line connects to the Union Pacific Main line just east of the FMC/Genesis Westvaco Facilities.

Green River (pop.11,496, 2023 Census), and Rock Springs Wyoming (pop. 22,954) are the two closest towns to Şişecam, 23 miles and 42 miles respectively. Evanston Wyoming (pop. 11,807) is 111 miles to the west and the major metropolitan area of Salt Lake City, UT (pop. 1,270,000) is 194 miles to the West. Green River and Rock Springs are well established communities with histories dating back to the 1800's as stops along the Union Pacific railroad with coal mining.

1.4 MINERAL DEPOSIT AND MINERAL LEASES

The trona deposits of SW Wyoming are the world's largest occurrence of natural soda ash. The deposit was formed from the evaporation of a shallow lake, Lake Gosiute, that covered SW Wyoming and NE Utah 50-60 million years ago (wyomingmining.org, 2020) (Lake Gosiute, Figure 6.1).

Trona is a non-metallic industrial mineral of the compound sodium sesquicarbonate which is a partially hydrated double salt of sodium carbonate (commonly known as soda ash (Na_2CO_3)) and sodium bicarbonate (commonly known as baking soda ($Na_2CO_3.NaHCO_3.2H_2O$)). The US Geological Survey recognizes 25 trona beds of economic importance (at least 1 meter in thickness and 300 km^2 in areal extent) within the Green River Basin. Identified in ascending order, the trona beds are numbered 1 through 25 from the oldest (stratigraphically lowest) to the youngest (stratigraphically highest). Şişecam Wyoming has mineable reserves in the shallowest mechanically minable Trona Beds 24 and 25 (800 to 1,100-feet. deep). Figure 6.2, Figure 6.3, and Figure 6.5 show cross sections of the Green River Basin and Bed 24 25 lithology.

The Bureau of Land Management designates available sodium leasing as the Known Sodium Leasing Area ("KSLA"). The KSLA is where trona thickness exceeds 1-meter, extends for over 300 km^2, and is greater than 80% grade. The known Mechanically Mining Trona Area ("MMTA") is defined where trona exceeds 8-feet thickness, has a grade greater than 85%, contains less than 2% salt (NaCl), and is at a depth no greater than 2,000-feet. Figure 3.2 shows the KSLA and MMTA boundaries along with the major leaseholders.

Şişecam Wyoming holds both private and public mineral leases and license over the Big Island Mine within the KSLA boundary. In addition to the mineral leases and license, Şişecam Wyoming has several other permits with both U.S. Federal and Wyoming state agencies that give it the right to operate the Big Island Mine.

Şişecam Wyoming has approximately 23,999 acres of sodium (Trona) under lease made up of approximately 8,094 Federal acres, 2,986 State acres, and 12,919 private acres. Table 1.1 and Table 3.1 list the current sodium lease and the license acreage owned by Şişecam Wyoming. The location of Şişecam's trona leases is illustrated in Figure 3.1, Figure 3.2 and Figure 3.3.

TABLE 1.1
ŞIŞECAM WYOMING SODIUM MINERAL LEASES AND LICENSE

Mineral Owner Lessor/Licensor	Contiguous Leases (Acres)	Non-Contiguous Leases (Acres)	Total (Acres)
Wyoming State	2,346	640	2,986
United Stated - Federal	8,094		8,094
Private - Sweetwater	12,759		12,759
Private - PAL	160		160
Total Area (Acres)	**23,359**	**640**	**23,999**

1.5 EXPLORATION

Exploration drilling has been the primary method to delineate trona Beds 24 and 25 with both surface-to-bed drilling and where possible bed-to-bed drilling. Over the history of the property 93 surface borings have been completed and 55 bed-to-bed core holes drilled for a total of 148 borings.

In general, the core samplings were collected from each boring and prepared for analysis. Methodology utilized for coring varied through time and has included mud drilling, saturated brine drilling, air-foam drilling, wireline drilling and continuous coring from surface. A limited number of borings were logged with geophysical techniques including gamma, sonic, neutron, caliper, and high-resolution rock mechanics tools.

In addition to the exploration drilling, Şişecam has taken observations and measurements from the mine workings with over 4,000 measurements taken to date.

For recent exploration drilling the core samples were examined, photographed, and logged in the field then boxed, labeled, and prepared for transportation. Early exploration had minimal documentation on preparation and core logging. More recent exploration campaigns are better documented with photographs of the core prior to boxing.

Standard practice was to split the core samples along the length of the core with half the sample sent to in mine storage. Sample intervals were generally between six and twelve inches in length. The split sample was then analyzed by the Şişecam plant laboratories. The Şişecam Wyoming laboratory has multiple certifications including ISO 9001-2015 and NSF. The lab has multiple well documented quality control and quality assurance processes which were reviewed during earlier site visits.

Records from the exploration projects are stored in a locked storage location in Şişecam Wyoming's technical office building at the mine site with the core samples stored in the mine where the stable humidity and temperature helps preserve the samples.

The sample preparation, analysis, quality control, and security procedures used by the Şişecam Wyoming Operations have changed over time to meet evolving industry practices. Practices at the time the information was collected were industry-standard, and frequently were industry-leading practices. In HPG's opinion, the sample preparation, analyses, and security procedures at the mine are acceptable, and are adequate for mineral resource and mineral reserve estimation and mine planning purposes.

1.6 DATA VERIFICATION

In addition to their historical knowledge of the subject property, both Mr. Hollberg and Mr. Leigh visited the Big Island Mine on November 7th, 11th, and 13th, 2024.

The purpose of these visits was to inspect both the surface and underground facilities, collect information for this effort and interview technical personnel working for Şişecam. During the visits HPG interviewed the following Şişecam technical and management personnel:

- Robert Calderone (Surface Manager);
- John Lewis (Mine Engineering Superintendent);
- Tyler Schiltz (Environmental Manager);
- Jessica Annala (Accounting Manager);
- Steve Thompson (Project Specialist – Technical Services);
- Don McCallum (Project Specialist – Technical Services);
- Shannon Larson (QC QA Laboratory Supervisor).); and
- Mikail Demir (Technical Services Manager):

Şişecam Wyoming's excellent mine ground conditions allows examination of most areas of the existing mine and old workings. Mr. Leigh and Mr. Hollberg have examined many of these areas for this study. Mr. Leigh spent several days underground taking spot measurement of the Trona thickness in several areas of interest. Section 9.0 contains additional information on these inspections.

Surface tours included examination of the processing facilities (Units 3, 4, 5, 6 and 7), tailings facilities, DECA ponds and processing facility.

During the interviews it was clear that Şişecam personnel have a good understanding of current mine operations, of the geology and mine planning, chemical processing and environmental obligations and are in good standing with their responsibilities.

Şişecam Wyoming's available geologic data is well documented and has been vetted over the history of the property. The fact that the property has been in successful operation for over 60 years and has extracted trona from both beds gives confidence in the available geologic information and proposed mining methods.

HPG reviewed the recent exploration drilling information and concludes it meets industry standards. Comparison of drilling data with in-mine measurements generally concur with in-mine measurements with anomalies typically explained by localized trona bed disruptions described in Section 6.4. The successful mining of Bed 24 and Bed 25 over the long history of the property gives added validation of the exploration data, analysis and quality control. HPG concludes that Şişecam Wyoming's geologic data, procedures and processes are adequate for mineral resource and mineral reserve estimation and mine planning purposes.

1.7 MINERAL PROCESSING

Trona is a compound of sodium sesquicarbonate with the following formula, $Na_2CO_3.NaHCO_3.2H_2O$. It is the combination of sodium carbonate and sodium bicarbonate. The finished product, soda ash, is sodium carbonate. In very general terms, the conversion of trona into soda ash is the conversion of the sodium bi-carbonate portion of the trona into sodium carbonate and then a purification process to remove the insoluble minerals by dissolution and recrystallization.

Şişecam uses the monohydrate process which converts the bicarbonate by calcining the dry ore in rotary kilns at temperatures between 150º and 200º C. The general formula for this conversion follows:

$$2NaCO_3 \blacklozenge NaHCO_3 \blacklozenge 2H_2O \rightarrow 3Na_2CO_3 + CO_2 + 5H_2O$$

Şişecam Wyoming currently is operating five soda ash processing units. Two ore calcining and dissolving units with four soda ash processing plants. Unit 6 is a single large integrated plant and has its own crushing plant, rotary kiln, dissolvers, crystallizers, dryers and TRM (tailings) pumps. Unit 7 is a large rotary kiln and dissolver capable of feeding liquor to the older crystallizer Units 3 through 5 which use the existing crushers and TRM facilities. Soda ash crystals from are dried and stored in silos prior to shipping via truck or rail. All the plants have had significant upgrades over the years to both improve recovery, energy efficiency, and increase soda ash production.

Şişecam has had an onsite laboratory throughout its history that is used to test and analyze plant feeds (trona), intermediate process streams (liquor) as well as the final product to ensure compliance with Şişecam published standards. The testing and analysis procedures and protocols are well established and have been developed and refined over the 60 years of operation.

In HPG's opinion, the sampling methods, sample preparation, analyses, and security procedures at the mine are acceptable and are adequate for mineral resource and mineral reserve estimation and mine planning purposes.

1.8 MINERAL RESOURCE ESTIMATE

Using the data provided by Şişecam Wyoming, HPG has completed its review of the Big Island Mine and concludes that the Big Island Mine's remaining leased and licensed Measured and Indicated in-place trona Resources ***exclusive of reserves*** as of December 31, 2024, total 153.3 million short tons (MST), of which 99.1 MST remain in the Lower Bed 24 and 54.3 MST remain in the Upper Bed 25. Measured In-Place Resources are calculated as 74.7 MST and Indicated In-Place Resources calculate as 78.7. Table 1.2 summarizes the estimated In-Place Trona Resource ***exclusive of the mineral reserves.***

The Mineral Resource ***exclusive*** of the mineral reserves is that portion of the ore body that has not been extracted because it was outside what is considered the economic limits, has been left in place to support the mine openings or has been sterilized by previous mining and cost-effective access is not considered practical. Mineral resources that are not mineral reserves do not have demonstrated economic viability.

TABLE 1.2
ESTIMATED IN-PLACE TRONA RESOURCES WITHIN BIG ISLAND
EXCLUSIVE OF RESERVES
MINING LICENSE AS OF DECEMBER 31, 2024
BASED ON $165/TSA

	Measured Resource		Indicated Resource		Measured +Indicated Resources			Inferred Resource	
Bed	Tons (Millions)	Average Grade % Trona	Tons (Millions)	Average Grade % Trona	Tons (Millions)	Average Grade % Trona	Average Thickness (ft)	Tons (Millions)	Average Grade % Trona
Lower Bed 24	45.4	88.5	53.6	86.6	99.1	87.5	8.6	-	-
Upper Bed 25	29.3	84.9	25.0	86.2	54.3	85.5	7.9	-	-
Total	**74.7**	**87.1**	**78.7**	**86.5**	**153.3**	**86.8**	**8.3**	-	-

1) Numbers have been rounded; totals may not sum due to rounding.
2) Based on a 6-foot minimum thickness and a 75% minimum grade cut-off.
3) The point of reference is in-place (insitu) inclusive of impurities and insoluble content.
4) Mineral resources are current as of December 31, 2024, using the definitions in SK1300.
5) Mineral resources are reported on a 100% ownership basis. Şişecam Wyoming is owned by Şişecam Chemicals Wyoming LLC 51% and by NRP Trona LLC 49%. .

Based on the current study, the Şişecam Wyoming Big Island remaining leased and licensed Measured and Indicated in-place trona Resources ***inclusive of reserves*** as of December 31, 2024, total 570.7 million short tons (MST), of which 377.9 MST remain in the Lower Bed 24 and 192.9 MST remain in the Upper Bed 25. Measured In-Place Resources are calculated as 300.1 MST and Indicated In-Place Resources calculate as 270.6 MST and Inferred In-Place Resources are calculated at 0.10 MST. Table 1.3 provides the In-Place Trona Resource ***Inclusive of the mineral reserves***.

The Mineral Resource ***inclusive*** of the mineral reserves is that portion of the ore body that is considered either economically viable for mining and can be converted to reserves or of economic interest but considered outside the current economic limits. Figure 11.3 and Figure 11.4 present the remaining in-place trona showing measured, indicated, and inferred resource areas. This is the material considered of economic interest that has the potential to be converted to reserves.

TABLE 1.3
ESTIMATED IN-PLACE TRONA RESOURCES WITHIN BIG ISLAND
INCLUSIVE OF RESERVES
MINING LICENSE AS OF DECEMBER 31, 2024
BASED ON $165/ TSA

	Measured Resource		Indicated Resource		Measured +Indicated Resources			Inferred Resource	
Bed	Tons (Millions)	Average Grade % Trona	Tons (Millions)	Average Grade % Trona	Tons (Millions)	Average Grade % Trona	Average Thickness (ft)	Tons (Millions)	Average Grade % Trona
Lower Bed 24	186.5	88.6	191.3	88.0	377.9	88.3	9.8	0.10	87.6
Upper Bed 25	113.6	87.6	79.3	87.3	192.9	87.5	9.1	-	-
Total	**300.1**	**88.3**	**270.6**	**88.1**	**570.7**	**88.0**	**9.6**	**0.10**	**88.8**

1) Numbers have been rounded; totals may not sum due to rounding.
2) Based on a 6-foot minimum thickness and a 75% minimum grade cut-off.
3) The point of reference is in-place (insitu) inclusive of impurities and insoluble content.
4) Mineral resources are current as of December 31, 2024, using the definitions in SK1300.
5) Mineral resources are reported on a 100% ownership basis. Şişecam Wyoming is owned by Şişecam Chemicals Wyoming LLC 51% and by NRP Trona LLC 49%.

Only the contiguous mineral leases were considered for this resource and reserve estimate. Section 16, T21N, R108W, (State Lease 0-42570), was excluded from this estimate because this state lease is isolated from the other contiguous lease blocks. The one-mile isolation makes accessing this for mechanical mining unlikely.

Criteria for this analysis are based upon a 6.0-feet minimum ore thickness and 75% minimum seam grade. This Resource evaluation is based upon 93 exploration drill holes, 55 borings from the mine workings, and several thousand available mine observations and measurements. The in-seam ore horizon includes the T2 to T4 zones and excludes the T1 zone as described in Section 6.4. Additionally, this updated report considers the 2021-2024 mine advancement in the northeast of Bed 24 and mining in the northeast and southwest extents of Bed 25.

Because of Şişecam's proximity to the Green River this resource and reserve estimate does not consider solution mining due to its likely subsidence and impact to this major water source. Therefore, HPG is only considering mechanical mining of the deposit using established systems and methods.

The reference point for the mineral resources is reported in-place (insitu) inclusive of impurities and insoluble content. The grade is percent trona, sodium sesquicarbonate ($Na_2CO_3.NaHCO_3.2H_2O$), the double salt of sodium carbonate (soda ash) and sodium bicarbonate (baking soda). A bulk density of 133 pounds per cubic foot (2.13 g/cc), was applied to convert volumes to tonnage. Several published documents list bulk densities of trona between 2.11 and 2.17 g/cc.

Mineral resources are current as of December 31, 2024, using the definitions in SK1300. Mineral resources are reported on a 100% ownership basis. Şişecam Wyoming is owned by Şişecam Chemicals Resources LLC ("Şişecam Chemicals,") 51% and by NRP Trona LLC ("NRP Trona") 49%.

Mineral resources are not mineral reserves. Mineral reserves are the economically mineable part of a measured or indicated mineral resource based upon application of modifying factors such as costs and revenues associated with the proposed operation and producing the final product in an economic and environmental assessment. Section 11.3 describes these factors. There is no certainty that any mineral resources in this report will ultimately be reclassified as reserves. Please refer to the note regarding forward-looking information at the front of the Report.

1.8.1 Factors That May Affect the Mineral Resource Estimate

Factors that may affect the mineral resource estimate include: changes to long-term soda ash price assumptions; changes in local interpretations of mineralization geometry and continuity of mineralized zones; changes to geological and grade shape and geological and grade continuity assumptions; changes to the cut-off grades used to constrain the estimates; variations in geotechnical, mining, and processing recovery assumptions; and changes to environmental, permitting and social license assumptions.

1.9 MINERAL RESERVE ESTIMATE

This independent Mineral Resource and Mineral Reserve estimate is completed in accordance with the requirements of the US Securities and Exchange Commission (SEC Regulation S-K Item 102 and Subpart 1300). The Mineral Resource Estimates included in this report have been used in conjunction with current dry mining operations to establish the "Proven" and "Probable" Mineral Reserves. The remaining in-place (insitu) and mineable trona reserves for the Big Island Mine are based on a life-of-mine plan ("LOM") using current mining methods.

No independent feasibility study was prepared in the determination of this reserve estimate. Instead HPG used the plus 60 years of mining and processing history at the Big Island to determine the mining, processing and economic parameters used for this reserve estimate. Based on this information the capital and operating cost estimates are at a minimum at a pre-feasibility level of confidence, having an accuracy level of ±25% and a contingency range not exceeding 15%.

In determining the reserve parameters and assumptions HPG considered the following circumstances:

- Şişecam's 60-year long history and economics of mining the deposit and producing soda as
  - The 183.3 MST of trona ore produced from these two beds;
- The projected long life of the mine and resulting likely change in economics, mining, and processing methods over its projected 40-year mine life;
- Şişecam's current processing facilities capabilities and projected future changes to these facilities;
- The economics associated with Şişecam's current mining equipment and history of "high grading" the thickest portions of the deposit;
- Şişecam's current mining equipment limitations and required future changes to these systems; and
- HPG's knowledge operating and managing other trona and potash mines.

Using current mining and refining technologies, it is our professional opinion that Şişecam Wyoming can realistically expect to economically recover 217.7 MST of trona ore at an average grade of 85.6 percent from these reserves as of the end of December 2024. This is made up of 72.8 MST from Bed 25 and 145.0 MST from Bed 24. Proven recoverable tons are calculated as 109.2 MST, of which 39.5 MST remain in the Upper Bed and 69.7 MST remain in the Lower Bed. Probable recoverable tons are calculated at 108.5 MST of which 33.3 MST remain in the Upper Bed and 75.2 MST remain in the Lower Bed. This is based on Şişecam continuing to mine using its existing mining methods and extraction rates for the remaining life of the currently controlled reserves. Estimated finished soda ash reserves are 118.0 MST. Table 1.4 below and Section 12.2 summarizes these findings.

In determining whether the reserves meet these economic standards, HPG made certain assumptions regarding the remaining life of the Big Island Mine, including, among other things, that:

- The point of reference is run-of-mine ore delivered to the processing facilities;

- The cost of products sold per short ton will remain consistent with Şişecam Wyoming's cost of products sold for the five years ended December 31, 2024;
- The weighted average net sales per short ton FOB plant, $165/ton, based on USGS pricing and historical pricing provided by Şişecam;
- Şişecam Wyoming's mining costs will remain consistent with the five years ended December 31, 2024, until they begin two-seam mining, at which time mining costs for the two-seam mining tonnage could increase by as much as 30%;
- Şişecam Wyoming's processing costs will remain consistent with the five years ended December 31, 2024, and rise in 10-years to account for lower grade material;
- Şişecam Wyoming will maintain an annual mining rate of approximately 4.3 million short tons of trona;
- Şişecam Wyoming will process soda ash with a 90% rate of recovery, without accounting for the deca rehydration process;
- The ore to ash ratio for the stated trona reserves is 1.835:1.0 (short tons of trona run-of-mine to short tons of soda ash);
- The run-of-mine ore estimate contains dilution from the mining process;
- Şişecam Wyoming will continue to conduct only conventional mining using the room and pillar method and a non-subsidence mine design;
- Şişecam Wyoming will, in approximately 10 years, make necessary modifications to the processing facilities to allow localized mining of 75% ore grade in areas where the floor seam or insoluble disruptions have moved up into the mining horizon causing mining to be halted early due to processing facility limitations;
- Şişecam Wyoming will, in approximately 20 years, make necessary equipment modifications to operate at a seam height of 7-feet, the current mining limit is 9-feet;
- Şişecam Wyoming has and will continue to have valid leases and license in place with respect to the reserves, and that these leases and license can be renewed for the life of the mine based on their extensive history of renewing leases and license;
- Şişecam Wyoming has and will continue to have the necessary permits to conduct mining operations with respect to the reserves; and
- Şişecam Wyoming will maintain the necessary tailings storage capacity to maintain tailings disposal between the mine and surface placement for the life-of-mine (LOM).

This reserve estimate is based on Şişecam Wyoming's current basis for mine design that is predicated upon no subsidence. Higher mining extraction rates could be achieved, but are complicated by the overlying Green River Drainage, plant facilities, and gas pipelines, which are sensitive to mine induced subsidence. HPG does not recommend that Şişecam Wyoming alter the current 'no subsidence' mine design.

Long-term recovery of the remaining mine trona pillars by secondary extraction methods, including solution mining, is not considered in this reserve estimate but may be available to Şişecam Wyoming in the future. Any secondary recovery will be limited by the non-subsidence zones surrounding the Green River and plant facilities discussed in Section 12.4. Where mining induced subsidence is possible, subsidence mitigation will be required over a large portion of the available mine resource.

TABLE 1.4
RECOVERABLE TRONA RESERVES – BIG ISLAND MINE AND REFINERY
TRONA BEDS 24 AND 25 AS OF DECEMBER 31, 2024
WITHIN THE CONTIGUOUS LEASES AND LICENSE
BASED ON $165/TSA

Bed	Proven (millions) Tons	Average Grade % Trona	Probable (millions) Tons	Average Grade % Trona	Total Reserves (Millions) Tons	Average Grade % Trona
Lower Bed 24	69.7	85.9	75.2	85.6	145.0	85.8
Upper Bed 25	39.5	85.6	33.3	84.8	72.8	85.3
Total	109.2	85.8	108.5	85.3	217.7	85.6

1) Numbers have been rounded; totals may not sum due to rounding.
2) Based on a 7-foot minimum thickness and an 85% minimum grade cut-off.
3) The point of reference is run-of-mine (ROM) ore delivered to the processing facilities including mining losses and dilution.
4) Mineral reserves are current as of December 31, 2024, using the definitions in SK1300.
5) Mineral reserves are reported on a 100% ownership basis. Şişecam Wyoming is owned by Şişecam Chemicals Wyoming LLC 51% and by NRP Trona LLC 49%.

1.9.1 Factors That May Affect the Mineral Reserve Estimate

Factors that may affect the mineral reserve estimate include: changes to long-term soda ash price assumptions; changes in local interpretations of mineralization geometry and continuity of mineralized zones; changes to geological and grade shape and geological and grade continuity assumptions; changes to the cut-off grades used to constrain the estimates; variations in geotechnical, mining, and processing recovery assumptions; and changes to environmental, permitting and social license assumptions.

1.10 MINING METHOD LIFE OF MINE PLAN

The underground mining operation uses continuous miners mining in a modified room and pillar method employing a ‘no surface subsidence’ mine design.

For the purposed of this study HPG has developed a detailed Life-of-Mine (LOM) plan that in HPG’s opinion is a reasonable mining sequence for this deposit over its remaining 40 plus years assuming Şişecam choses to mine as much of the resource as possible (Figure 12.1 and Figure 12.2). A two-stage mine plan has been developed. The first stage mines the deposit based upon the current mining equipment and processing plant limitations mining to the 9-foot isopach. This matches the practice employed over the last 20 years and should be viable for another 20 years.

The second stage mining is based upon smaller mining equipment and assumes changes to the dissolver sections of the processing plants. These changes should allow mining to the 7-foot isopach and processing areas of the trona resource where disruptions to the ore body have been and will be encountered as mining progresses towards the edge of the ore body. The 7-foot mining limit was selected based on current economics and practices at similar operations.

This type of two-stage mining is only possible when underground conditions allow access to the bypassed areas long after the first stage of mining was completed. This is true for the Big Island Mine where the old mine workings developed 60 years ago are still open, accessible, and currently in use. Where possible the LOM plan accounts for future access to the thinner areas. In areas where future access was determined to be too difficult or costly, the thinner trona resource have been considered sterilized and are not reserves.

Portions of the remaining Bed 24 trona are located under previously mined areas in Bed 25. These areas are where 'two-seam mining' is required. Two-seam mining extracts the mineral from both beds. Due to the thin interburden (25 to 40-feet) between Bed 24 and 25 and wide entries mined, mining induced stresses are higher in these areas of two-seam mining, Şişecam Wyoming has conducted significant computer modeling of the rock mechanics and predicted mine entry stability surrounding two-seam mining. Additionally, three test panels and one production panel have been mined in areas where lower extraction conventional mining techniques were employed. These panels were mined successfully and remain accessible and stable for many years after mining.

Since the 2021 TRS, Şişecam has mined two full CM panels under existing CM panels, extended the LB North Mains and are developing two additional CM panels. These initial panels have been instrumented, will be monitored and analyzed as adjacent panels are developed. Two more CM panels are planned to complete the analysis and verification of the current two-seam mining methods.

Examination of the two-seam areas during the site visit indicates favorable mining conditions consistent with predicted results. Based on the two-seam mining to date, the existing test panels, and the cost structure at Şişecam Wyoming, it is reasonable to conclude that the two-seam areas can be economically mined and therefore are considered reserves in this study.

Portions of the LB West mine have been flooded, and areas have collapsed, limiting access to trona resource west of the existing mine workings. This area is considered a resource but not reserves and the area is not part of the LOM plan due to the risks and high costs associated with seismicity, water inflow, less competent roof strata, and soft ore.

1.11 INFRASTRUCTURE

The Şişecam Facility has been in operation for over 60 years and the infrastructure is more than adequate and well developed for its purposes. The site infrastructure includes among other things:

- Soda Ash Process facilities;
- Electrical generation and transmission facilities;
- Natural gas pipelines and distribution facilities;
- Water supply and pumping station;
- Water pipelines, treatment, and distribution;
- Process waste tailings facilities;
- Sewage waste and runoff treatment facilities;
- Truck and rail loadout;
- Railyard and rail maintenance facilities;
- Mine access shafts. ore hoists, and ventilation fans;
- Mine infrastructure, belt haulage, crushing, and mining equipment; and
- Ample buildings for offices, labs, change-rooms, warehouses, and maintenance shops.

Section 15.0 contains a more detailed discussion of the site infrastructure.

1.12 ENVIRONMENTAL, PERMITTING AND SOCIAL CONSIDERATIONS

The Big Island Mine and Refinery's permit area encompasses 28,125 acres which includes the processing plants, ore hoist, mine fans, surface tailings disposal ponds, evaporation ponds, sewer ponds, site containment ponds, and administration, supporting structures and leased minerals. Şişecam's permit boundary is illustrated in Figure 3.4 and Figure 3.5.

The primary permit agencies include Federal and Wyoming State Departments including:

- State of Wyoming;
  - Sodium Leases;
- US Bureau of Land Management;
  - Sodium Leases and Right-of-Ways;
- Us Environmental Protection Agency;
  - Air and Water quality;
  - Waste and toxic substances;
- US Fish and Wildlife;
  - Migratory birds;
- US Nuclear Regulatory Communion;
  - License for instrumentation;
- Wyoming Department of Environmental Quality;
  - Title V Operating Permit;
  - Permit to Mine;
  - Asbestos ;
  - Water Quality;
  - Underground injection control;
- Wyoming Game and Fish Department
  - Chapter 33 and Chapter 10 Permit;
- Wyoming Office of Homeland Security;
  - Emergency and Hazardous Chemical Inventory;
- Wyoming State Engineers office;
  - Industrial/pollution control ground water wells;
  - Sewage, tailings and evaporative ponds; and
  - Water rights.

Şişecam Wyoming permitting, and environmental reporting appear to be current.

Areas where Şişecam has incurred challenges with environmental compliance are typical of the basin soda ash mines and include process emissions, fugitive dust, tailings, pond seepage, site containment, and drinking water TOC. Over the many years of operation, very few Notices of Violations ("NOVs") have issued and there are no currently outstanding non-compliant NOVs or material citations. The drinking water TOC problem and site containment overflow were primarily operational in nature and appear to be solved. Based upon the reports and documentation provided by Şişecam, the tailings pond and associated seepage continues to be successfully controlled by the groundwater systems and is acceptable to WDEQ.

Şişecam has an active consent decree as a settlement of a violation notice received in December of 2021, from Air Quality concerning PM10 monitoring at the No. 2 Crusher Area and Ore Stockpile building. The settlement was reached May 21, 2024, with Şişecam paying a fine of $26,000 and agreeing to modify beltlines, install multimodule baghouses and implement inspections and maintenance plans. Design work for the changes needs to be completed by June 2025 with installation complete within 24 months of obtaining all required permits for the new equipment. Funds have been budgeted, and design work is ongoing.

The low to zero toxicity waste generated by the mining and the processing facilities, (mine and process tailings), are deposited into a series of storage impoundments (ponds) or are re-injected as thickened slurries into abandoned areas of the mine. The process tailings, made up of shales, mudstones, and process purge are exempt from hazardous waste regulation under Section 3001(b) of the Resource Conservation and Recovery Act (RCRA). The Şişecam Wyoming tailings facility has four surface evaporation tailings ponds that are located primarily within prehistoric playa lakes. Except for Pond 2, which has a lined membrane, the remaining ponds are unlined.

Şişecam is converting the tailings disposal from a thickened slurry to a coarse tailings disposal which will separate the coarse and fine tailings. The coarse tailings will be stacked in the recently completed lined Pond 2 disposal area and the fine material will be disposed of in the existing ponds. The separation of coarse tailings will provide an opportunity for stacking utilizing earth moving equipment and extending the life of the current tailings ponds. With this change, the life of Pond 2 is estimated to be 30 years.

Based on the current surface tailings basin life of over 30 years and available alternative disposal areas and methods HPG considers the assumption that Şişecam Wyoming will maintain adequate tailings disposal storage for the life of the reserves to be reasonable.

There is an approved reclamation plan in place with a bond in the amount of $45.6 million for reclamation of all disturbed lands and facilities.

1.13 MARKETING

The Big Island Mine and Refinery has an extensive history of consistent sales with an established customer base, logistics and marketing. Şişecam has multiple contracts for soda ash sales both short and long term.

As part of this evaluation HPG reviewed confidential marketing studies provided by Şişecam. These studies indicate a steady increase in demand for soda ash long into the future. Price fluctuations are forecast based on expected additional new production and/or shutdowns of synthetic plants.

Soda ash is a basic industrial mineral used in manufacturing for thousands of years. As a basic commodity, soda ash demand is strongly correlated with gross domestic product (GDP). As developing economies grow and industrialize the world demand for soda ash has consistently increased. Historical soda ash demand has increased 2-3% annually with this trend expected to continue well into the future. Significant increase in demand is predicted in India, Africa, South America and China’s demand continues to grow. US demand for soda ash is expected to remain constant with little if any growth.

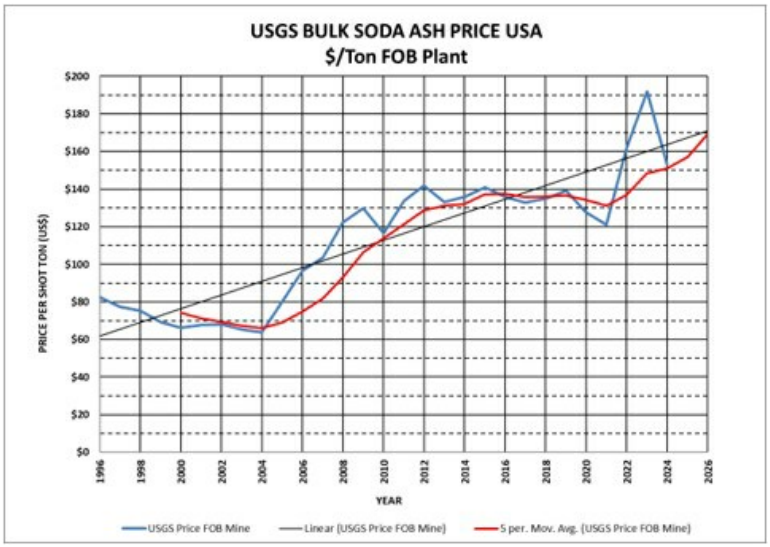
The end uses of soda ash are consistent with growth in solar glass and lithium batteries as lithium carbonate. Historically, glass making was 50% of demand. That has grown to nearly 60% for flat glass, bottled glass and increasingly solar glass. The increase in solar glass is offsetting decreases in bottled glass. Uses for chemicals, soaps, detergents, sodium bicarbonate make up the remaining demand. The projected demand for electric vehicles has created an increasing market for soda ash in the manufacturing of lithium carbonate needed for the batteries. This demand is expected to double in the next ten years. Similarly solar glass has become an important market but is dominated by China.

Historical soda ash pricing has been controlled by general global economic conditions and by the impact of added or removed production. Green River's naturally produced soda ash has a historic cost advantage over synthetically produced soda ash as illustrated by the long history of the Green River Basin production being exported successfully throughout the world to countries with local synthetic soda ash production (i.e., China, Mid-East, and Europe).

Multiple soda ash brown field and green field expansion projects have been announced or are currently being constructed. US expansion in the is expected to add 6 to 7 million tons of production by the early 2030's. China has added nearly 6 million tons of new natural soda ash capacity with plans for an additional 3 million tons. This follows the closure of some of China's synthetic plants but is predicted to be a net increase to global supply. As supply increases, the higher cost synthetic producers are impacted the most. Their costs are 50% higher than the natural soda ash producers and historically lower prices have forced closures of these plants.

Historically, when new relatively large influxes soda ash production enters the market, it impacts the overall soda ash supply and demand by putting pressure on prices first in the domestic market but also internationally until the consistently increasing soda ash demand catches up. These swings in soda ash price can be seen in Figure 1.1 showing the historical US soda ash price FOB the Green River plants and are typical for an industrial commodity. The overall trend is for steadily increasing soda ash price and demand.

For the purposes of this estimate a 2025 soda ash price of $165/ton FOB plant was assumed. This price is based on published USGS pricing and is consistent with Sisecam's historical revenues and confidential market studies.



Source: USGS

Figure 1.1 USGS Published Soda Ash Prices $/Ton FOB Plant

1.14 ECONOMIC ANALYSIS

Cost effective mining and processing has been conducted since the early 1960's at Şişecam Wyoming generally under the same mine design assumptions utilized in this reserve estimate.

With the information provided in previous reviews and this review HPG has been able to examine the last eight years of actual production costs and revenues. This long history shows a stable and predictable cost structure and consistent revenue. The only exception was 2020 and 2021 where costs and revenues were lower due to the worldwide COVID-19 slowdown. Despite this historic business interruption both years were cash positive with 2021 rebounding to near normal levels. Therefore, HPG considers using historical costs for mining the reserves and producing soda ash a reliable basis to forecast future costs and revenues.

The financial model that supports the mineral reserve declaration is a standalone model that calculates annual cashflows based on scheduled ore production, assumed processing recoveries, soda ash sale prices, projected operating and capital costs. Capital and operating cost estimates are at a minimum at a pre-feasibility level of confidence, having an accuracy level of ±25% and a contingency range not exceeding 15%.

Because Şişecam and NRP are structured as a pass-through entities for income tax purposes no income taxes were included in the economic analysis. The currency used to document the cashflow is US$ based on constant 2024 dollars.

The basis for the economic analysis is the previous five years of actual performance adjusted for expected changes in operating costs and necessary capital expenditures to execute the proposed life of mine (LOM) plan. Table 1.5 illustrates the expected cash flows for the LOM in ten-year increments. The economic model indicates positive cash flow, a 20.9% internal rate of return (IRR) and a positive net present value (NPV) of $1,226 million at a 5% discount rate. The full financial model by year is shown in Table 19.1. This analysis shows that the operation will provide positive cash operating profits and is therefore considered to be economically viable.

TABLE 1.5
CASH FLOW PROJECTION

	OPERATING YEARS (Year 1 - 2025)					
	1-10	11-20	21-30	31-40	41-50	TOTALS
REVENUE						
Mine Production Trona (Mst)	43.0	43.0	43.0	43.0	43.0	215.0
Ore to Ash	1.835	1.835	1.835	1.835	1.835	1.835
Soda Ash Production (Mst)	23.4	23.4	23.4	23.4	23.4	117.2
Revenue $/ton	$ 165	$ 165	$ 165	$ 165	$ 165	$ 165
Gross Revenue ($ millions)	**$ 3,866**	**$ 3,866**	**$ 3,866**	**$ 3,866**	**$ 3,866**	**$ 19,332**
Cost of Goods Sold						
Variable Costs	$ 906	$ 906	$ 906	$ 906	$ 906	$ 4,532
Fixed Cost	$ 1,279	$ 1,399	$ 1,411	$ 1,517	$ 1,517	$ 7,123
Other Cost	$ 263	$ 263	$ 263	$ 263	$ 263	$ 1,317
Total Operating Costs ($ millions)	$ 2,449	$ 2,569	$ 2,581	$ 2,687	$ 2,687	$ 12,973
CAPEX ($ millions)	$ 325	$ 400	$ 320	$ 300	$ 346	$ 1,691
Pre-Tax Operating Profit ($ millions)	**$ 1,092**	**$ 897**	**$ 965**	**$ 880**	**$ 834**	**$ 4,669**

Note: Numbers have been rounded; totals may not sum due to rounding.

1.15 OBSERVATIONS AND CONCLUSIONS

Approximately 116 MST of the reported recoverable Trona (48%) is dependent upon Şişecam confirming the viability of two-seam mining in the next four years. Most of these tons (approximately 69 MST, 60%) are in areas with thickness over 9-feet.

The November 2024 site visit revealed that since the 2021 report was completed, Şişecam has made significant progress developing the LB North mains and panel entries. Ground conditions were found to be good for the mains entries and production panels confirming the current design. Based on current projections it will be two to four years before Şişecam will verify the viability of two-seam mining. It is possible that two-seam mining may require significant variations from current mining equipment and practices.

Approximately 141 MST of the reported recoverable tonnage is above 9-feet thick and can be mined and processed with the existing equipment, but areas will require ore blending or modification of the processing facilities to handle lower grade ore for short periods. These areas comprise 31 MST of the total reserves. It is anticipated that these plant modifications need to be made within 10-15 years.

The practice of “high grading” the deposit and only mining the thicker material first risks sterilization of the thinner areas if access is lost. Recovery of the reserves less than 9-feet will require changes to the mining and utility equipment, will incur higher mining costs, require access rehabilitation costs and is dependent upon the ability to access these areas through old workings or via extensions of old mains entries as shown in the LOM plan developed for this estimate. As future mining continues, with the current large mining equipment, some loss of portions of the edge of the ore bodies will occur, especially when long production panels are developed. This material makes up 73 MST of the estimated recoverable tonnage. There is some risk that access to these areas 20 years after mining might not be possible.

The roof failure, water inflow and associated subsidence of the Lower Bed West mine area has intrinsic risks to an evaporite mine below a major waterway that must be continuously monitored and evaluated for any changes. These include increased water flow or changes in water type indicating its source could be surface waters. Risks due to high inflow of water can range from higher mining costs to loss of access.

1.16 RECOMMENDATIONS

HPG supports Şişecam’s plan to perform additional exploration drilling to improve data density. Additional exploration drilling would result in a higher percentage of the reserve base classified as proven and should better define the trona grades near the drilling locations. Drilling south of the existing lease boundary would help to identify available future reserves and grades. Additionally, it is recommended that Şişecam undertake Bed to Bed drilling from areas in the Upper Bed that overly future LB two-seam mining. Bed to Bed core drilling is significantly less expensive than surface exploration but is limited to two-seam areas.

It is recommended that Şişecam continue to pursue optimization of the refinery facilities to allow efficient processing of the predicted long-term decline in run-of-mine (ROM) trona grades as mining moves to the edges of the ore bodies. A more robust processing facility would allow a more complete recovery of the remaining ore reserves in areas where localized seam rolls and post depositional insoluble infilling has impacted recovery and stopped mining.

It is recommended that Şişecam optimize its ability to blend ore from multiple production areas of the mine to minimize the impact of the lower grade ore from the miners producing from the edge of the deposit or encountering seam rolls. This would also allow improved recovery of the deposit by maintaining a higher average ore grade and minimize sterilization of the thinner or lower grade areas of the deposit.

It is recommended that Şişecam continue close monitoring of the west end water inflows and associated subsidence. HPG would advise more frequent isotope testing of the inflow as well as additional hydrologic studies including source tracing.

2.0 INTRODUCTION

2.1 BACKGROUND

Natural Resource Partners LP ("NRP"), engaged Hollberg Professional Group (HPG) to update HPG's December 2021 Technical Report Summary on the trona mineral assets of Şişecam Wyoming LLC ("SCW") comprising Şişecam's Green River Property (Big Island Mine & Refinery), Sweetwater County, Wyoming, United States of America ("USA"). Şişecam Wyoming is owned by Şişecam Chemicals Wyoming LLC (SCW LLC) 51% and by NRP Trona LLC ("NRP Trona") 49%. NRP Trona LLC is a wholly owned subsidiary of NRP. Natural Resource Partners LP is the registrant.

This Technical Report Summary (TRS) has been prepared in accordance with the requirements of the US Securities and Exchange Commission (SEC Regulation S-K Item 102 and Subpart 1300). This resource and reserve estimate of the remaining in-place and mineable trona reserves for the Big Island Mine is based on a life-of-mine plan ("LOM") using current mining methods.

HPG personnel involved in this project include:

- Kurt F. Hollberg, PE, Project Manager, Mining Specialist, Competent Person.
- Terry Leigh, AIPG, CPG, PG, (Leigh Geological Services, Inc.) Resource Specialist.

This report was authored by Mr. Hollberg and Mr. Leigh.

Mr. Hollberg is a Licensed Professional Engineer in Wyoming, Colorado, Utah, and Nevada as well as being a Registered Professional Member of the Society for Mining, Metallurgy, and Exploration (SME).

Mr. Leigh is an AIPG Certified Professional Geologist and a Licensed Professional Geologist (PG) in Wyoming.

Both Mr. Hollberg and Mr. Leigh are considered 'qualified persons' for trona reserve estimation as defined by the JORC, SEC, and NI 43-101 Codes. Mr. Hollberg has over 35 years of experience and Mr. Leigh has over 40 years of experience in the Green River Trona Basin. Section 26.0 contains summary information on the team members.

Neither HPG nor any of its employees and associates employed in the preparation of this report has any beneficial interest in Şişecam Wyoming or in the assets of Şişecam USA or NRP. HPG will be paid a fee for this work in accordance with normal professional consulting practice as a consultant to Şişecam Wyoming. Şişecam Wyoming's predecessor OCI Wyoming (OCI) employed Mr. Hollberg from 1999 to 2003 and employed Mr. Leigh from 2003 to 2010. Mr. Hollberg left OCI Wyoming in 2002 to engage in consulting work and started HPG. Mr. Leigh retired from OCI Wyoming in 2010.

Mr. Hollberg and Mr. Leigh have over 70 years of combined experience in the Green River Trona Basin and its mining operations. They have performed engineering and geological services for Şişecam Wyoming, Genesis Alkali Corporation, Tata Chemicals, and TG Soda Ash Inc. HPG has served as a consultant to Şişecam Wyoming and its predecessor OCI performing mine engineering services since 2003 as well as other trona operators. Mr. Leigh has performed numerous geological services for Şişecam Wyoming and its predecessor OCI including supervision of exploratory drilling, seismic exploration, in-mine geologic mapping, and construction of a geologic model for the Big Island Mine as well as two other Green River Trona Basin operations.

The individuals responsible for this report have extensive experience in the mining industry, in the Green River Trona Basin, and are members in good standing of appropriate professional organizations.

Kurt F. Hollberg, BSc, PE Colorado (PE-36599), Wyoming (PE-6599), Nevada (PE-018102), Utah, (PE 10385339), Registered Professional Member SME # 1475226. Richard Terry Leigh, MSc, AIPG (6708), CPG, Wyoming (PG-53).

No independent feasibility study was prepared in the determination of this reserve estimate. HPG has utilized the 60-plus year history of the Big Island Mine and Refinery mining trona and processing soda ash along with the past eight years of operational and economic data demonstrating that the operation is economically viable.

2.2 SOURCES OF INFORMATION

This study uses the existing Şişecam Wyoming geologic database, drilling information, recent mine Trona thickness observations, current and historical financial information, and market studies, to estimate the trona resources available to Şişecam Wyoming. Based on this Mineral Resource Estimate and current business economics, a LOM plan was developed to estimate the recoverable trona and finished soda ash reserves which are the basis of this Mineral Reserve Estimate.

Section 24.0 contains a listing of the data files and sources provided by Şişecam Wyoming.

In addition to their historical knowledge of the subject property, both Mr. Hollberg and Mr. Leigh visited property for multiple days in November of 2024. The purpose of these visits was to inspect both the surface and underground facilities, collect information for this effort and interview technical personnel working for Şişecam. During the visits HPG interviewed the following Şişecam technical and management personnel:

- Robert Calderone (Surface Manager);
- John Lewis (Mine Engineering Superintendent);
- Tyler Schiltz (Environmental Manager);
- Jessica Annala (Accounting Manager);
- Steve Thompson (Project Specialist – Technical Services);
- Don McCallum (Project Specialist – Technical Services);
- Shannon Larson (QC QA Laboratory Supervisor).); and
- Mikail Demir (Technical Services Manager):

Şişecam Wyoming's excellent mine ground conditions allows examination of most areas of the existing mine and old workings. Mr. Leigh and Mr. Hollberg have examined many of these areas for this study. Mr. Leigh spent several days underground taking spot measurement of the Trona thickness in several areas of interest. Section 9.0 contains additional information on these inspections.

Surface tours included examination of the processing facilities (Units 3, 4, 5, 6 and 7), tailings facilities, DECA ponds and processing facility.

During the interviews it was clear that Şişecam personnel have a good understanding of current mine operations, of the geology and mine planning, chemical processing and environmental obligations and are in good standing with their responsibilities.

3.0 PROPERTY DESCRIPTION

3.1 BIG ISLAND MINE OPERATIONS

Şişecam Wyoming owns and operates the Big Island Mine complex that consists of an underground trona mine and associated refinery ("Şişecam Wyoming Mine and Refinery"). The Şişecam Wyoming Mine and Refinery lies northwest of the town of Green River in Sweetwater County, Wyoming as shown in Figure 3.1 below. Mining occurs in two trona seams, Bed 24 and Bed 25, nominally at 850-feet and 900-feet deep, respectively. The Big Island Mine was started in 1962 by the Stauffer Chemical Company and has been in continuous operation since that time. Şişecam gained control of the property in 2021and is the controlling partner with 49% owned by NRP. A full history of the ownership chain is discussed in Section 5.0.

The underground mining operation uses continuous miners mining in a modified room and pillar method. As of December 31, 2024, 183.3 MST of trona ore have been mined from these two beds, according to Şişecam Wyoming production records.

The Şişecam Wyoming refinery purifies the trona ore into soda ash (sodium carbonate). The soda ash is stored in silos on site then shipped via rail, truck or to bulk ocean carriers to international customers. Soda ash is an essential raw material in glass making, chemicals, detergents, and other industrial products.

Şişecam Wyoming sells the soda ash internationally and domestically through Şişecam Chemical Resources, which act as Şişecam Wyoming's marketing and sales agent for all its domestic sales. In 2020, Şişecam Chemicals exited the American Natural Soda Ash Corporation ("ANSAC"). ANSAC was set up in 1984 to act as the international sales, marketing, and distribution cooperative for the leading producers of natural soda ash in the United States. Şişecam Chemicals now manages all its international sales, marketing and logistics.

Şişecam's customers are primarily glass manufacturing companies, chemical manufacturing companies and distributors who serve certain markets.

Şişecam Parent was founded in 1935 and is a global leader in chemicals and glass industries with operations in 14 countries and 22 thousand employees. Şişecam is one of the largest glass and chemicals producers in the world.

> "Şişecam is the only global producer operating in all three key areas of the global glass industry: flat glass, glassware and glass packaging. It ranks among the world's top two producers in glassware, and among the top five global producers in glass packaging and flat glass. Şişecam is also one of top three largest producers of soda and a world leader in chromium chemicals." (Ref: Şişecam Website)

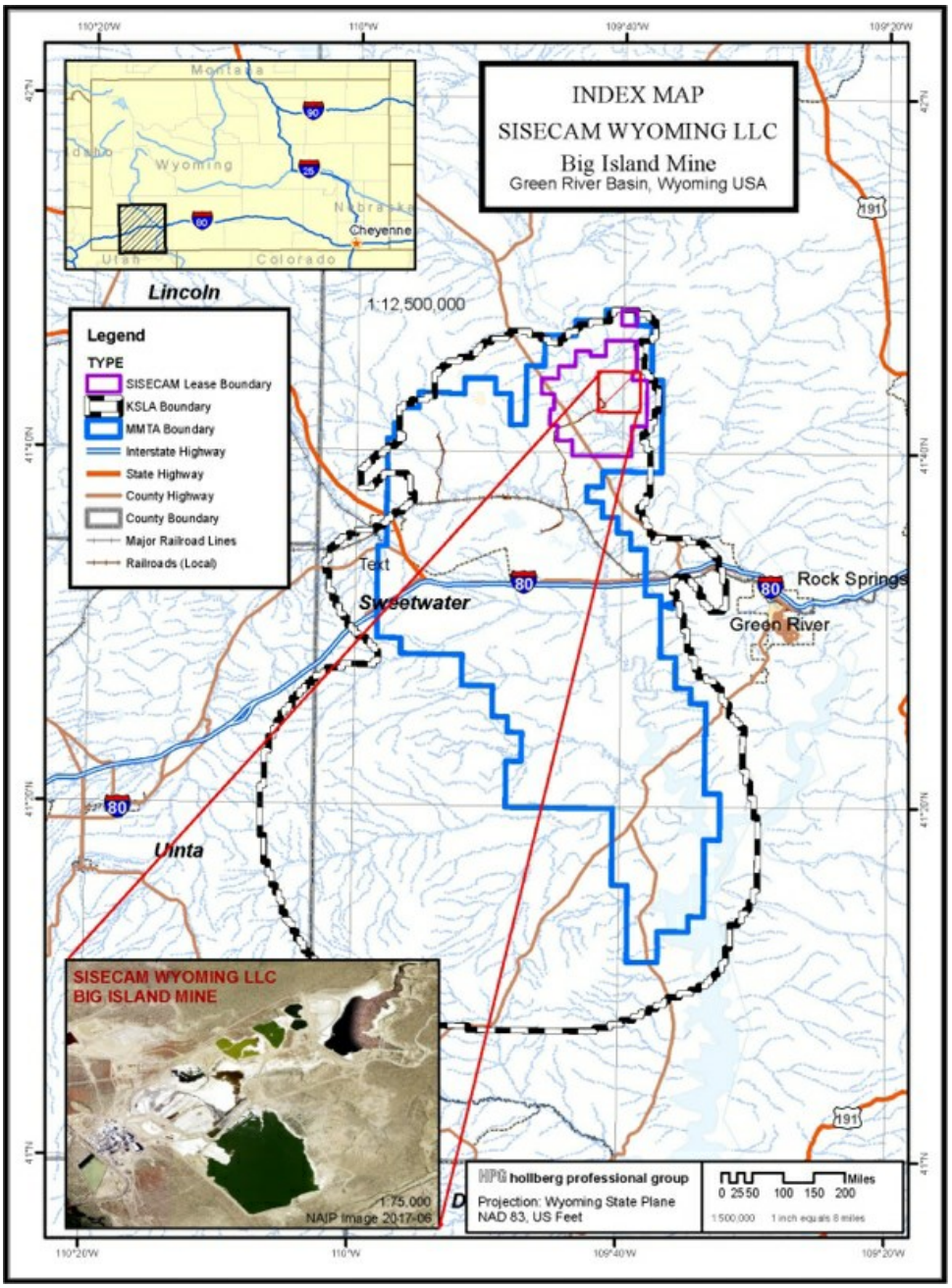


Figure 3.1 Big Island Mine General Location

3.2 OWNERSHIP

3.2.1 Trona Lease Area

Trona is defined by the US government as a "solid leasable mineral," subject to the Mineral Leasing Act of 1920. Federally owned sodium resources are controlled by the Department of the Interior and managed by the Bureau of Land Management ("BLM") and limited by Title 30§184(b). The act stipulates 10-year renewable lease periods, subject to annual rental and royalty fees, and demonstrated diligence. The federal government limits sodium leases to 5,120 acres by any one operator in one state but an exception in 30§184(b)(2) allows the Secretary, at his discretion, sodium leases or permits on up to 30,720 acres in any one State. Privately controlled sodium resource acreage is not limited.

The Bureau of Land Management designates available sodium leasing as the Known Sodium Leasing Area ("KSLA"). The KSLA is where trona thickness exceeds 1-meter, extends for over 300 km^2, and is greater than 80% grade. The known Mechanically Mining Trona Area ("MMTA") is defined where trona exceeds 8-feet thickness, has a grade greater than 85%, contains less than 2% salt (NaCl), and is at a depth no greater than 2,000-feet. Figure 3.2 shows the KSLA and MMTA boundaries along with the major leaseholders.

Other mineral owners in the Green River Basin include the State of Wyoming, along Sweetwater Royalties LLC (Sweetwater) and other private mineral owners. Sweetwater Royalties LLC is a subsidiary of Sweetwater Trona OpCo LLC (Sweetwater OpCo). Sweetwater is the second largest mineral owner in the KSLA. Sweetwater's current holdings were part of the Pacific Railroad Act of 1864 granting every other section 20 miles on either side of the railroad to the Union Pacific Railroad. Sweetwater acquired ownership through a spin-off from Occidental Petroleum's recent acquisition of Anadarko Petroleum in 2019. In 2020 Occidental sold the Land Grant to Sweetwater Royalties, LLC.

Because the Green River Basin is also an area of extensive oil and gas exploration and production ("O&G"), there is a possibility of conflict between O&G and underground mining. The regional BLM and the Joint Industry Committee on Oil and Gas ("JICOG") have established an O&G drilling moratorium area along with a Special Sodium Drilling Area ("SSDA") under the 1997 Green River Resource Management Plan ("GR RMP") (BLM 2011) within the KSLA that completely restricts O&G drilling. The area was largely defined by the BLM MMTA boundary. The KSLA is in the Kemmerer and Rock Springs Districts of the BLM.

In 2011 the BLM began the process of developing a revision to the 1997 GR RMP, known as the Rock Springs RMP Revision ("RS RMP") (BLM 2011). As of December 20, 2024, the Bureau of Land Management (BLM) finalized the Rock Springs Resource Management Plan for the Rock Springs Field Office. The RS RMP is the BLM's plan to manage the 3.6 million acres of Federal lands and 3.7 million acres of minerals in the Rock Springs District. The RS RMP attempts to forecast leasing and development activities over the next 20 years and determine the most appropriate land use. During the RS RMP's development, four land use plans were developed, no action, resource conservation, resource use, and moderate approach. BLM's choice of "resource conservation" has made the RS RMP highly controversial with significant opposition from all mineral owners, operators, and the State of Wyoming. The plan impacts nearly over two million acres of Federal Lands by changing, limiting or eliminating access and uses that were allowed in the past. The Wyoming Governor along with Utah and Wyoming's congressional delegation are pursuing legal and legislative actions to attempt to overturn the RS RPM.

All of Şişecam's mineral leases and facilities are within the Rock Springs District and are affected by the new RS RMP. The RS RMP's impact on Şişecam's operations are not fully understood but could impact the following. The RS RMP upholds the previous restrictions of O&G drilling within the MMTA which will continue to restrict any drilling over the Big Island Mine. New restrictions concerning Sage Grouse and Wild Horses will impact surface operations only and are considered minimal impact to SCW's current operations (Section 17.6). There have been concerns voiced about the availability of Federal Sodium Lease renewals under this plan as lease renewals are not defined and will be administered under the new resource conservation rules.

In the area between the KSLA and MMTA moratorium areas, existing permitted O&G work is allowed, and new work is approved on a case-by-case basis under specific drilling rules. Şişecam Wyoming's leases and license are bounded on the north and east by the KSLA and MMTA boundaries (Figure 3.2). There are three Federal O&G leases dated in the late 1980's that coincide with the Şişecam Sodium leases as well as a recent, 2020, "Area of Interest" Memorandum of Agreement covering most of the Şişecam Sodium Lease Area that is limited to O&G operations. As long as the SSDA O&G moratorium area stays in effect, the current Şişecam Wyoming Federal holdings are protected from concurrent O&G exploration. Şişecam's privately held leases are available for drilling under restrictive O&G drilling rules. Sweetwater Royalties reportedly supports the BLM moratorium and has not allowed drilling in the moratorium area.

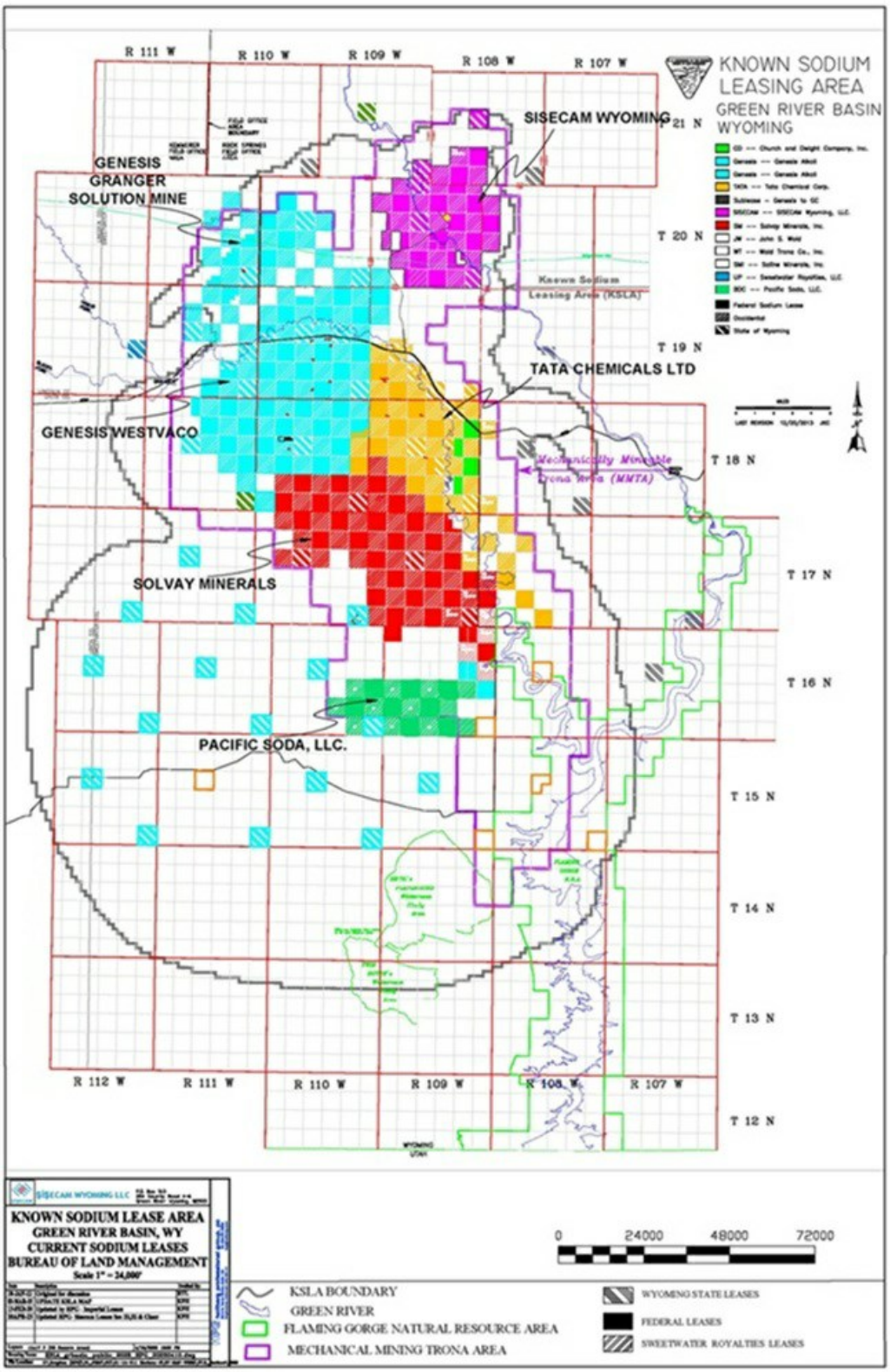
3.2.2 Mineral Leases and License

Şişecam Wyoming holds both private and public mineral leases and license over the Big Island Mine. In addition to the mineral leases and license, Şişecam Wyoming has several other permits with both U.S. federal and Wyoming state agencies that give it the right to mine the Big Island Mine.

Şişecam Wyoming has approximately 23,999 acres of sodium (Trona) under lease made up of approximately 8,094 Federal acres, 2,986 State acres, and 12,919 private acres.

Table 3.1 lists the current sodium leases and the license owned by Şişecam Wyoming and their status.

The location of Şişecam's trona leases are illustrated in Figure 3.2 and Figure 3.3.



(Source US BLM KSLA June-2024– Modified by HPG to include basin lease additions and ownership changes.)

Figure 3.2 KSLA Lease Map

TABLE 3.1
ŞIŞECAM WYOMING SODIUM MINERAL LEASES AND LICENSE
As of December 31, 2024

Mineral Owner	Section	Township North	Range West	Lease or License #	Acreage[1]	Date Acquired	Date Expires	Royalty Rate[2]
WYOMING	16	21	108	0-42570	640	12-Aug-1977	1-Aug-2029	6.0%
	16	20	109	0-25779	640	15-Sep-1969	1-Sep-2029	6.0%
	36	20	109	0-42571	546	1-Oct-1969	1-Aug-2029	6.0%
	36	21	109	0-25971	640	27-Jun-1977	1-Nov-2029	6.0%
	4	20	109	0-26012	519	15-Nov-1969	1-Nov-2029	6.0%
				Wyoming Total	2,986			
UNITED STATES (BLM)	18	20	108	W-0111730	620	31-Oct-1961	1-Dec-2027	6.0%
	12	20	109		535	31-Oct-1961	1-Dec-2027	6.0%
	22	20	109		160	31-Oct-1961	1-Dec-2027	6.0%
	22	20	109		160	31-Oct-1961	1-Dec-2027	6.0%
	24	20	109		543	31-Oct-1961	1-Dec-2027	6.0%
	26	20	109		480	31-Oct-1961	1-Dec-2027	6.0%
	10	20	109	W-0111731	640	31-Oct-1961	1-Dec-2027	6.0%
	28	21	108		640	1-Nov-1961	1-Dec-2027	6.0%
	32	21	108		640	31-Oct-1961	1-Dec-2027	6.0%
	14	20	109		640	31-Oct-1961	1-Dec-2027	6.0%
	8	20	109	W-079420	640	31-Oct-1961	1-Dec-2027	6.0%
	28	20	109		640	31-Oct-1961	1-Dec-2027	6.0%
	20	20	109		323	31-Oct-1961	1-Dec-2027	6.0%
	22	20	109		160	31-Oct-1961	1-Dec-2027	6.0%
	18	20	109		157	31-Oct-1961	1-Dec-2027	6.0%
	34	20	109		640	1-Jan-2015	1-Dec-2027	6.0%
	2	20	109	W-101824	317	1-Jun-1988	1-Jun-2028	6.0%
	32	20	109	W-190736	160	1-Apr-2022	1-Apr-2042	6.0%
				U.S. Total	8094			
PAL	22	20	109		160	16-Aug-1973	16-Aug-1983[3]	5.0%
				PAL Total	160			
SWEETWATER ROYALTIES, LLC	31	21	108	TR-702	640	18-Jul-1961	18-Jul-2061	8.0%
	33	21	108		640	18-Jul-1961	18-Jul-2061	8.0%
	7	20	109		690	18-Jul-1961	18-Jul-2061	8.0%
	7	20	108		619	18-Jul-1961	18-Jul-2061	8.0%
	19	20	108		621	18-Jul-1961	18-Jul-2061	8.0%
	1	20	109		266	18-Jul-1961	18-Jul-2061	8.0%
	3	20	109		328	18-Jul-1961	18-Jul-2061	8.0%
	5	20	109		519	18-Jul-1961	18-Jul-2061	8.0%
	29	21	108		640	18-Jul-1961	18-Jul-2061	8.0%
	9	20	109		637	18-Jul-1961	18-Jul-2061	8.0%
	11	20	109		643	18-Jul-1961	18-Jul-2061	8.0%
	13	20	109		540	18-Jul-1961	18-Jul-2061	8.0%
	15	20	109		637	18-Jul-1961	18-Jul-2061	8.0%
	17	20	109		640	18-Jul-1961	18-Jul-2061	8.0%
	19	20	109		320	18-Jul-1961	18-Jul-2061	8.0%
	21	20	109		640	18-Jul-1961	18-Jul-2061	8.0%
	23	20	109		640	18-Jul-1961	18-Jul-2061	8.0%
	25	20	109		544	18-Jul-1961	18-Jul-2061	8.0%
	27	20	109		636	18-Jul-1961	18-Jul-2061	8.0%
	33	20	109		640	18-Jul-1961	18-Jul-2061	8.0%
	35	20	109		640	18-Jul-1961	18-Jul-2061	8.0%
	29	20	109		640	18-Jul-1961	18-Jul-2061	8.0%
				Sweetwater Royalties Total	12,759			
				TOTAL ACREAGE	**23,999**			

(1) Acreage is approximate (2) United States (BLM) 2% for 10 Years starting January 1, 2021 (3) For as long as monthly payments are made.

(2) All US BLM Leases have a 2 percent royalty rate for a period of 10 years, as of January 1, 2021, based on Industry-Wide Royalty Reduction Soa Ash and Sodium Bicarbonate issued by the Secretary of the Interior, for all existing and future Federal soda ash or sodium bicarbonate leases.

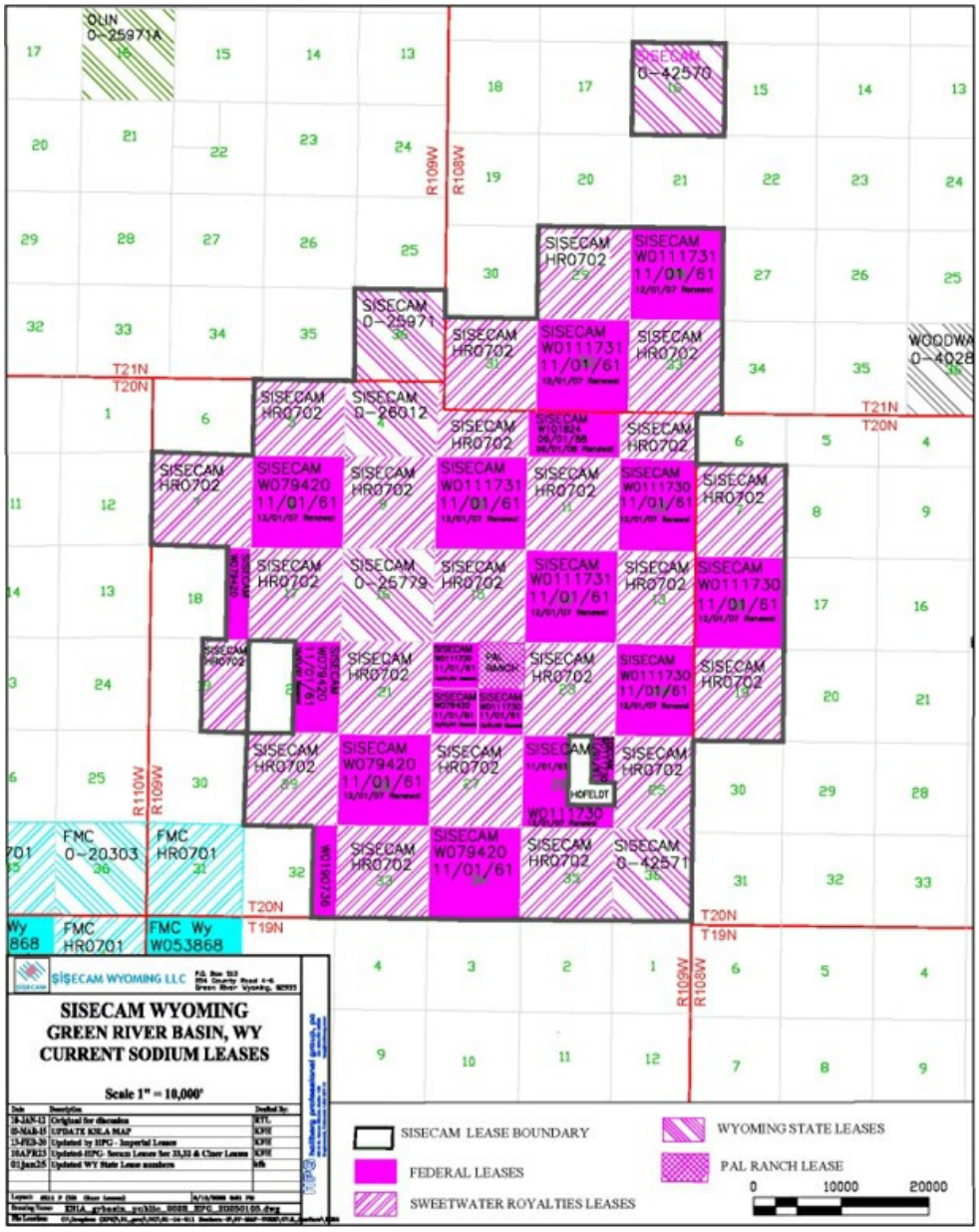


Figure 3.3 **Şişecam Wyoming – Sodium Lease Tenure Location Map**

For the purposes of this study, it has been assumed that all the relevant mineral leases, license, and permits that are in place, that the terms and conditions of all agreements relative to tenure have been met, that there are no encumbrances to the tenures, and they can be renewed into the future for the life of the operations. HPG has conducted a general review of mineral titles and license documents provided by Şişecam. HPG has not verified title or otherwise confirmed the legal status of any of the leases or the license but has relied upon documents provided by Şişecam Wyoming's representatives regarding the current status of the leases and license shown.

All federal leases are renewable on a 10-year or 20-year cycle with the terms and royalty rate adjusted at the time of renewal. By Notice of Industry-Wide Royalty Reduction Soda Ash and Sodium Bicarbonate Leases dated February 8, 2021, the Secretary of the Interior authorized an industry-wide royalty reduction from currently set rates by establishing a 2 percent royalty rate for a period of 10 years, as of January 1, 2021, for all existing and future Federal soda ash or sodium bicarbonate leases.

Wyoming state leases are renewable on a 10-year cycle with the terms and royalty rate adjusted at the time of renewal.

On September 20, 2010, Şişecam Wyoming exercised its right to renew the original Union Pacific (Anadarko/ Sweetwater) license for an additional 50-year period. The current Sweetwater TR-702 license extends to July 18, 2061. There are no provisions in the available documents for extension past this period. On October 12, 2015, Anadarko informed Şişecam's predecessor OCI Wyoming that, per the License Agreement the royalty rate would be raised to 8%. OCI Wyoming and now Şişecam Wyoming disputed that claim, the litigation was settled in favor of Şişecam with the current royalty rate on these leases now 8%. On January 20, 2023, Şişecam amended the TR-702 lease to include the south half of Section 33, T20N R109W, adding approximately 320 acres.

In 2017, the BLM granted Şişecam's request to renew three Federal Sodium leases for their 10-year extension totaling 7,617 acres (W-0111730, W-0111731, and W-079420). On June 1, 2018, BLM renewed Şişecam's Federal lease No. W-101824 of 316.9 acres also for 10 years. On April 12, 2022, Şişecam obtained lease to an additional 160 fringe acres Section 32 T20N R109W (W190736) for a period of 20 years.

Şişecam requested renewal of all five Wyoming State leases that expired in 2019. All five of the leases, 0-42570, 0-25779 0-42571, 0-25971, and 0-26012 were granted renewal for 10 years.

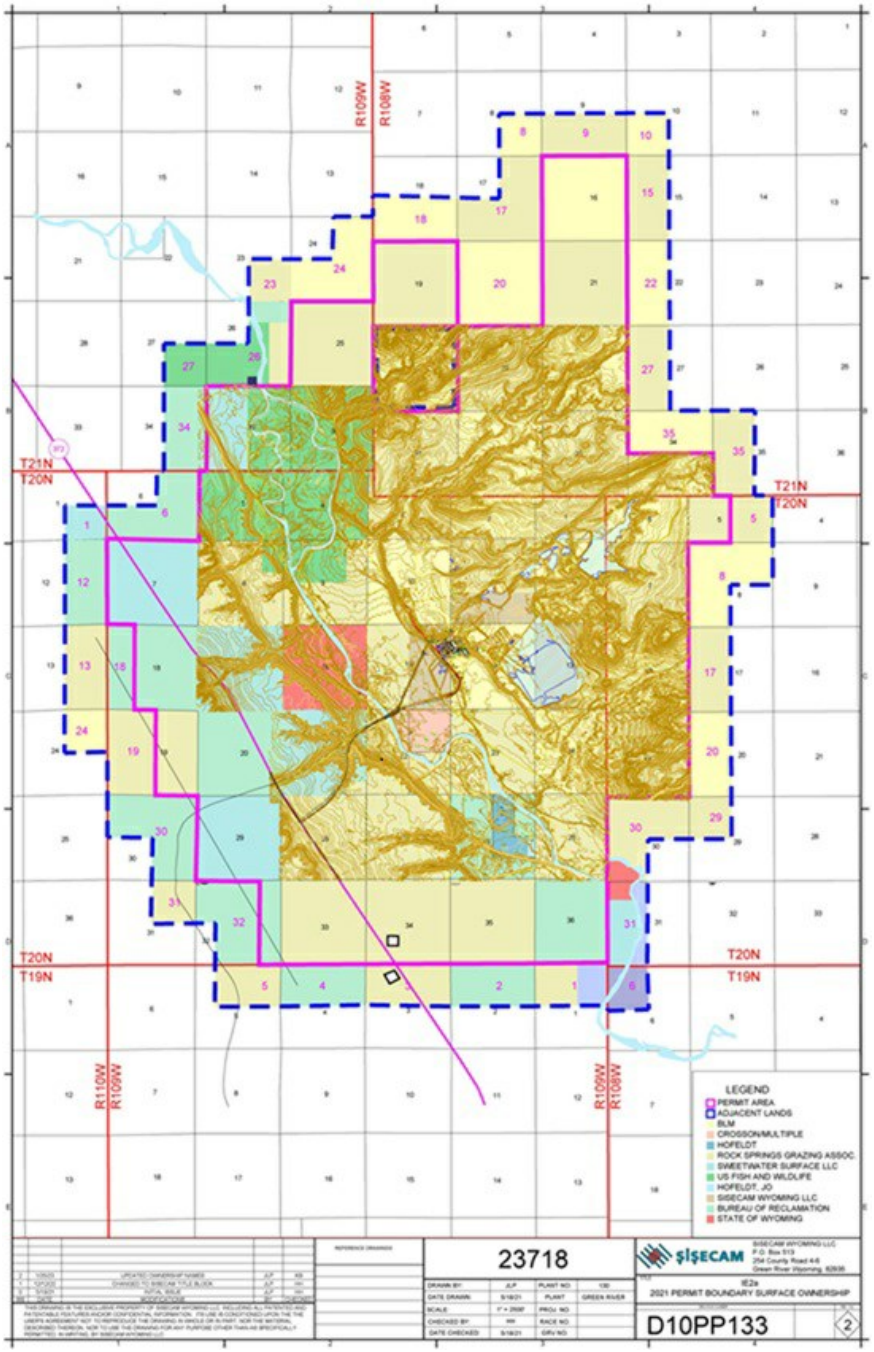
Şişecam still has lease rights to the B. Pal property private lease of 160 acres, "for as long as monthly rental payments are made". Şişecam has reported that they continue to make the payments. Both the Upper Bed 25 and Lower Bed 24 areas of the PAL lease have been mined. The Bed 24 area has been used for TRM paste disposal and the Bed 25 Panels are some of the first two-seam mining test panels. Because we are not considering secondary mining, and this area has been mined it was not considered for this reserve estimate.

Şişecam Wyoming's predecessor, OCI Wyoming, owned another private sodium lease, the Hoefelt lease. This lease expired in 1997, and no parts of those lands are considered for this reserve estimate. The Bed 25 mining area for the Hoefelt property has been completed. The available Bed 24 trona for the Hoefelt property has been excluded from this analysis but might be available if a lease agreement were to be completed with Hoefelt's heirs. This area contains an estimated 2.48 million recoverable trona tons at an estimated 88.9% trona grade. The lease also stipulated a perpetual easement for the workings contained in this lease.

Şişecam Wyoming pays royalties to the State of Wyoming, the U.S. Bureau of Land Management and Sweetwater. The royalties are calculated based upon a percentage of the value of soda ash and related products sold. Şişecam Wyoming pays a production tax to Sweetwater County, and trona severance tax to the State of Wyoming that is calculated based on a formula that utilizes the volume of trona ore mined and the value of the soda ash produced. Şişecam Wyoming has a perpetual right to continue operating under these leases and license as long as it maintains continuous mining operations and intends to continue renewing the leases and license as has been historical practice.

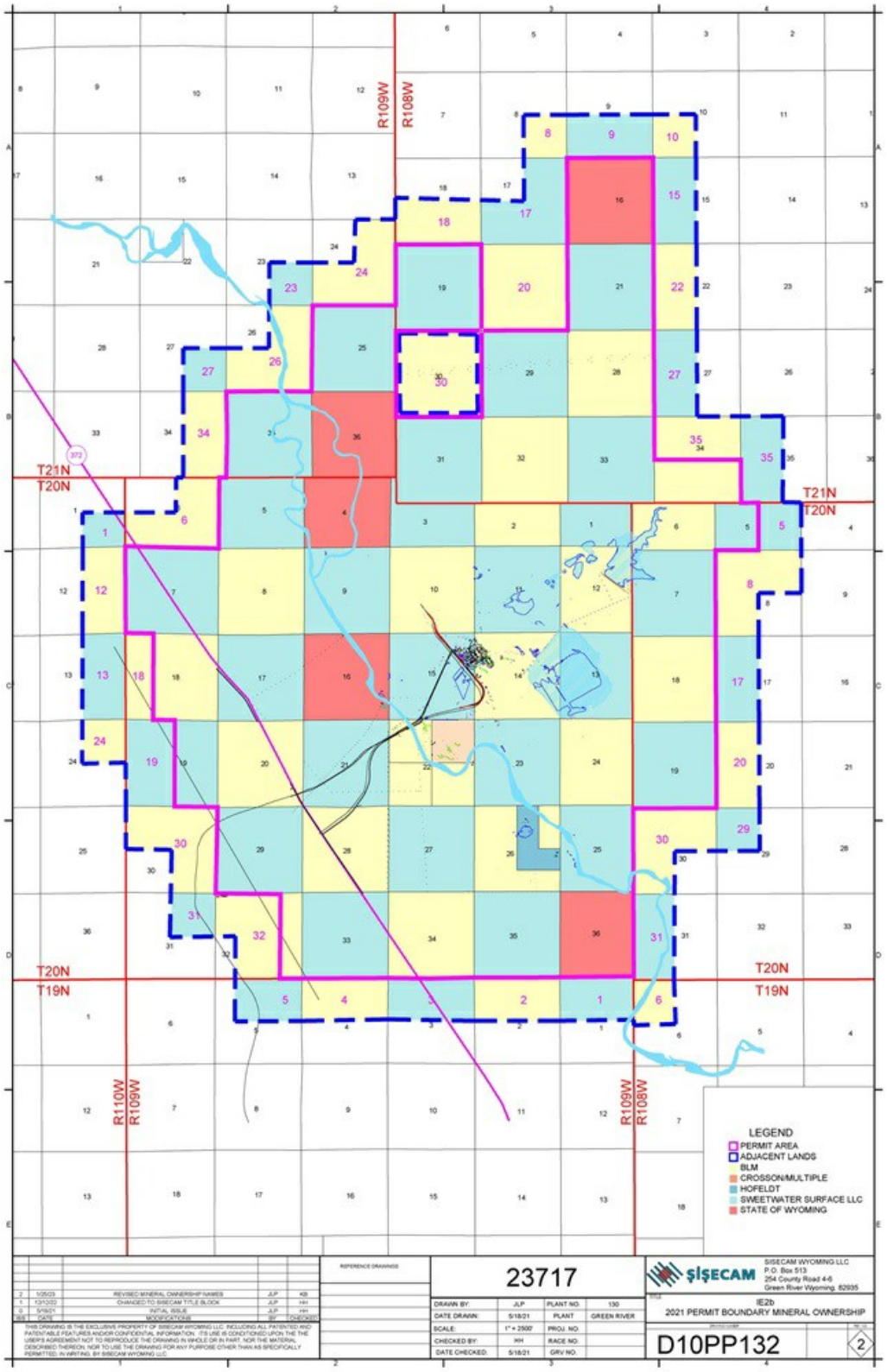
The Şişecam facilities are located on leased and deeded surface rights on T20N R109W Sections 1, 2, 3, 9, 10, 11, 12, 13, 14, and 15; and T20N R108W Sections 5, 6 and 7. The mineral rights and surface estate for Sections 2, 6, 10, 12, and 14 are Federal leases administered by the BLM. Sections 1, 3, 5, 7, 9, 11, and 15, are private lands and are leased from Rock Spring Grazing Association (RSGA) to Şişecam to sink wells and shafts for sodium related mining activities and related pipelines, power and telephone lines, roadways, wells, and all other associated facilities so long as Şişecam has licenses to mine. The Mineral rights for Sections 1, 3, 5,7 9, 11, and 15 are owned by Sweetwater.

Figure 3.4 shows the boundaries of the current mining permit and the surface ownership for the subject property. Figure 3.5 shows the boundaries of the current mining permit and mineral ownership for the Big Island Mine.



Source: Şişecam Wyoming

Figure 3.4 Surface Ownership



Source: Şişecam Wyoming

Figure 3.5 Mineral Ownership

4.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

4.1 ACCESS

Şişecam Wyoming's mine and refinery are located 23 miles northwest of the town of Green River, Wyoming. The operation is accessible from Interstate 80 (I80), a four-lane divided highway, west to Exit 83, La Barge Road, then north on Wyoming Highway 372 (WY372) 12 miles to the OCI road, County Road 4. Both WY372 and County Road 4 are established paved two-lane highways that are maintained by Sweetwater County and the state of Wyoming Department of Transportation (WDOT).

The Şişecam site is serviced by a dedicated railroad spur line off the main East West Union Pacific rail line. Şişecam's spur line connects to the Union Pacific Main line just east of the FMC/Genesis Westvaco Facilities.

In addition to the onsite railyard, Şişecam utilizes a contract railyard along La Barge Road (Highway 372) which is privately owned and maintained by others. There are five track lines at the facility to assist with switching empty and loaded cars and prepping them for shipment offsite. There is an estimated 18,400-feet of track owned by the Big Island Mine and Refinery.

4.2 CLIMATE

The Şişecam facilities are located in the Green River drainage of the upper Colorado River system. Situated in a high intermountain basin bounded by the Wyoming Range to the West, Uinta Mountains to the south and the Wind River Range to the northeast, mean elevation exceeds 6,000-feet. Climate is dry, cold-temperate-boreal and characterized by limited rainfall (less than 8 inches) with long, cold, dry winters and warm-hot, summers with occasional storm producing flash floods. Evaporation exceeds 36 inches resulting in little excess water, limiting the majority of vegetation to the Green River flood plain. Wind generally blows from a southwesterly direction.

4.3 LOCAL RESOURCES

Green River (pop.11,496, 2023 Census), and Rock Springs Wyoming (pop. 22,954) are the two closest towns to Şişecam, 23 miles and 42 miles respectively. Evanston Wyoming (pop. 11,807) is 111 miles to the west and the major metropolitan area of Salt Lake City, UT (pop. 1,270,000) is 194 miles to the West. Green River and Rock Springs are well established communities with histories dating back to the 1800's as stops along the Union Pacific railroad with coal mining. The area has established oil and gas production, coal mining, major power generation, and five established trona mines that have been in business for 40 to 60 years. As a result, the surrounding communities have well developed industrial support capabilities. Both Green River and Rock Springs have developed school systems with a community college located in Rock Springs that has specific programs for training the technical and mechanical workers needed in the area. The community college has close ties to Wyoming University in Laramie, 200 miles to the east.

The population is stable and well diversified and considered the city of "56 nationalities" according to the Rock Springs Chamber of Commerce. The mines and oil and gas industry have higher than average compensation and benefits resulting in a stable community and workforce.

4.4 INFRASTRUCTURE

The Şişecam Facility has been in operation for over 60 years and the infrastructure is more than adequate and well developed for its purposes. The site infrastructure includes among other things:

- Soda Ash Process facilities;
- Electrical generation and transmission facilities;
- Natural gas pipelines and distribution facilities;
- Water supply and pumping station;
- Water pipelines, treatment, and distribution;
- Process waste tailings facilities;
- Sewage waste and runoff treatment facilities;
- Truck and rail loadout;
- Railyard and rail maintenance facilities
- Mine access shafts. ore hoists, and ventilation fans;
- Mine infrastructure, belt haulage, crushing, and mining equipment; and
- Ample buildings for offices, labs, change-rooms, warehouses, and maintenance shops.

Section 15.0 contains a more detailed discussion of the site infrastructure.

4.5 PHYSIOGRAPHY

Şişecam is located in the semi-arid high plateau region of southwestern Wyoming at elevations between 6,200 and 6,600-feet above mean sea level (MSL). Only about one percent (1%) of the land is barren, but the short growing season, rugged topography, poor soils, and limited availability of precipitation make vegetation rather sparse in both variety and productivity. Over most of the area, vegetation is homogeneous in appearance consisting of about 90 percent brush and shrubs, chiefly sagebrush, saltbush, with greasewood and winter fat in drainage areas. The area has historically been utilized for livestock grazing, wildlife habitat, and recreational hunting. This area provides limited winter grazing for cattle, sheep, and horses. However, stocking rates are low primarily due to sparse vegetation (Soil Conservation Service [SCS]1988).

The Şişecam property is crossed by the Green River which is a primary tributary to the Colorado River and located in the Upper Green Slate Watershed and designated Class 2AB waterway.

Figure 3.4 illustrates the topography of the Şişecam leases along with the surface ownership.

5.0 HISTORY

During the late 1950's into the early 1960's, Stauffer Chemical Company was the second business to commence permitting for a soda ash facility in the Green River Basin. The area of interest was along the banks of the Green River. The permit area is located on the Big Island Bridge USGS Topographic Quadrangle. The Big Island is a predominate geographic feature in the Green River and is currently part of the Seedskadee Wildlife Refuge. From the initial permitting, the property has been known as the Big Island Mine and Refinery.

The former Stauffer Chemical Company initiated Trona exploration in August 1959. With the completion of 26 exploration drill holes by August 1960, the first reserve estimated was calculated; "A total of at least 360 million tons of better than 90 percent trona in beds 8.5 to 14-feet thick was proved up." (Trona Exploration in the Big Island Area, 1960). Estimating the Upper Bed (east of the Green River) contained 170 million tons and the Lower Bed, 190 million tons.

During 1961 minerals leases were obtained from Federal and private landowners, including the Union Pacific Railroad, totaling 33-¼ Sections.

In 1962 Stauffer Chemical opened the Big Island Mine and Refinery in Green River, Wyoming with the purpose of producing all-natural soda ash from mined trona. Two shafts were sunk, and Refinery Units 1 & 2 were constructed to produce dense soda ash. Mining commenced in the Lower Bed 24.

Four (4) supplemental exploration drill holes were completed in 1967 and the acquisition of 2-¼ Sections from the State of Wyoming and private ownership. Unit 3 was constructed to increase soda ash production.

Exploration activity increased substantially in the late 70's and early 80's more than doubling the database with 36 additional drill holes, now totaling 69 borings. Lease activity increased with addition of 4-¼ Sections from Wyoming and private mineral ownerships. Then totaling 39-¾ Sections or approximately 24,737 Acres.

Over the next two decades Stauffer expanded production by adding Unit 4 and Unit 5 processing facilities. Production increased from 400,000 tons of soda ash per year to over 950,000 tons per year.

In 1985, the Big Island Mine and Refinery was acquired by Chesebrough Ponds and changed ownership several times over the next few years, first to Imperial Chemical Industries in 1986 and a year later, to Rhone-Poulenc. Under Rhone-Poulenc continuous miners were introduced and Units 3 and 4 processing facilities were converted from triple effect crystallizers to mechanical vapor recompression.

Additional leases were acquired in 1988 (W-101824) increasing the area to 43-¼Sections or approximately 26,654 Acres.

In 1996, Rhone-Poulenc sold its interest in the soda ash business to OCI Company, LTD, later renamed OCI Chemical Corporation.

OCI added Unit 6, a standalone processing facility, in 1998 and decahydrate mining in 2006 to increase the sites production to over 2.5 million tons per year.

In 1997 the Hoefelt private lease totaling 160 acres expired and was not renewed. In June of 2008 the former Union Pacific Lease TR708, 2,877 acres, was not renewed.

In September of 2013, OCI announced its Initial Public Offering (IPO) on the NYSE under 'OCIR', a master limited partnership. In 2015, Ciner Enterprises Inc., a subsidiary of Ciner Group, acquired OCI Chemical Corporation. The company was renamed Ciner Resources Corporation. In 2021, Ciner Group sold 60% of its US soda ash business to Şişecam Chemicals and the company was renamed to Şişecam Resources LP.

In 2023, Şişecam Resources LP was dissolved and Şişecam Chemicals Wyoming LLC ("SCW LLC") became the direct owner of 51% of Şişecam Wyoming. SCW LLC, the operating partner, controls and operates Şişecam Wyoming with non-operating ownership of 49% by NRP Trona. SCW LLC is 100% owned by Şişecam Chemicals Resources LLC ("Şişecam Chemicals,") which is 100% owned by Şişecam USA Inc. ("Şişecam USA"). Şişecam USA is a direct wholly-owned subsidiary of Türkiye Şişe ve Cam Fabrikalari A.Ş, a Turkish Corporation ("Şişecam Parent"), which is an approximately 51%-owned subsidiary of Turkiye Is Bankasi Turkiye Is Bankasi ("Isbank").

In 2022 and 2023, Şişecam Wyoming acquired trona leases on 480 additional acres along the southwest boundary of the current mine. These "fringe" leases include the south half of Section 33 – T20NR109W private and the eastern quarter of Section 32 – T20NR109W US Federal Lease.

As of December 31, 2024, Şişecam Wyoming has approximately 23,999 acres of sodium (Trona) under lease made up of approximately 8,094 Federal acres, 2,986 State acres, and 12,919 private acres (Table 3.1).

Şişecam Parent is an international company with operations in 14 countries on four continents. 'It ranks among the world's top two producers in glassware, and among the top five global producers in glass packaging and flat glass. Şişecam is also one of top three largest producers of soda and a world leader in chromium chemicals.' (Şişecam Website).

With Şişecam as the 'controlling partner' the Big Island Mine and Refinery is now vertically integrated with an end user of their product providing a base load for their plant and strengthening their international sales and logistics.

5.1 PRODUCTION HISTORY

Şişecam Wyoming has a long and consistent production history extending over 60 years. This long history forms the basis for our reporting of the trona reserves and resources. Table 5.1 shows the sites trona and soda ash production for the last six years. The only year of decreased production was 2020 due to the worldwide impact of COVID-19 virus.

TABLE 5.1
ŞIŞECAM HISTORICAL SODA ASH PRODUCTION
BY YEAR

	2019	2020	2021	2022	2023	2024
Trona tons	4,157,009	3,653,830	4,276,837	4,373,724	4,371,284	4,467,168
Soda Ash tons	2,712,187	2,236,850	2,682,203	2,660,172	2,572,441	2,475,813

6.0 GEOLOGICAL SETTINGS, MINERALIZATION, AND DEPOSIT

6.1 GEOLOGIC SETTING

The trona deposits of SW Wyoming are the world's largest occurrence of natural soda ash. The deposit was formed from the evaporation of a shallow lake, Lake Gosiute, that covered SW Wyoming and NE Utah 50-60 million years ago (wyomingmining.org, 2020).

6.2 TRONA DEPOSITION

The trona mineral deposits within the Şişecam Wyoming lease area are correlated with the lacustrine sequences of the Eocene Green River Formation. Trona and other associated evaporates occur within the Upper Wilkins Peak Member.

The lacustrine sequences of the Green River Formation were deposited in a series of lakes. Approximately fifty million years ago, Lake Gosiute (Lake Gosiute, Figure 6.1), fluctuated in areal extent in response to climatic and tectonic events. At its smallest size, during restrictive phases, the lake was very saline and contained large quantities of dissolved solids. When evaporation of the water reached critical levels, dissolved solids precipitated to form trona, shortite, halite, and other saline minerals. Trona formed as a chemical precipitate and required a specific range of weight percent of sodium and carbon dioxide in solution, a specific range of temperatures, and a specific range of relative concentrations of other ions (calcium, magnesium, chlorides, sulfates, etc.) within the water column.

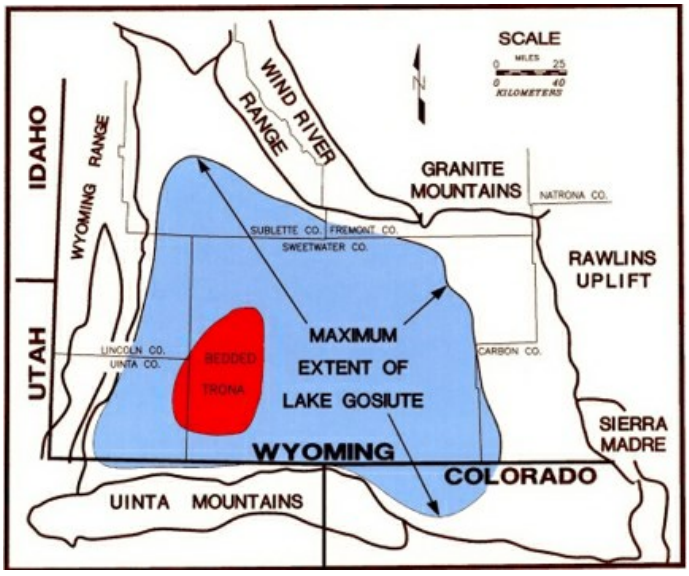


Figure 6.1 Deposition Basin – Lake Gosiute

Sediments eroding from the peripheral mountains created extensive alluvial plains and broad flat pediments. Clastic wedges of the Wasatch and Bridger-Washakie formations intertongue and grade laterally with the lacustrine sequences of the Green River Formation (Figure 6.2).

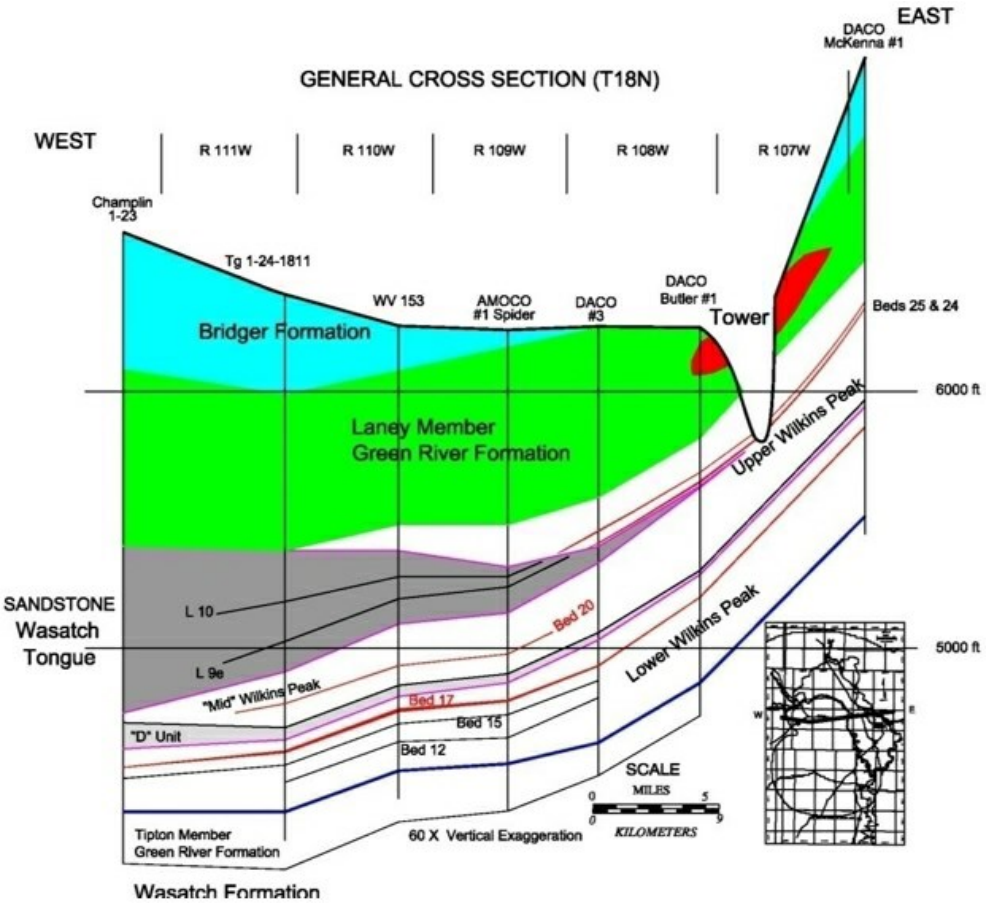


Figure 6.2 Deposition Cross Section

Within the hydrogeographic basin of approximately 77,300 km^2 (48,500 square miles), the greatest expanses of Lake Gosiute and surrounding mudflats occurred during the Tipton and Laney stages. Bradley (1964) estimated the lake expanded to over 24,000 km^2 (15,000 square miles). Total evaporation of Lake Gosiute during the restrictive phases of the Wilkins Peak stage is indicated by the presence of sedimentary structures in the deposit.

6.3 TRONA BEDS OF THE GREEN RIVER BASIN

The US Geological Survey recognizes 25 trona beds of economic importance (at least 1 meter in thickness and 300 km2 in areal extent) within the Green River Basin. Identified in ascending order, the trona beds are numbered 1 through 25 from the oldest (stratigraphically lowest) to the youngest (stratigraphically highest), as shown in Figure 6.3. Şişecam Wyoming has mineable reserves in the shallowest mechanically minable Trona Beds 24 and 25 (800 to 1,100-feet deep). Currently Genesis Alkali, Solvay, and Tata are mining Bed 17 occurring at greater depth. Pacific Soda is focused on the lower trona beds, Bed 1 through Bed 5, utilizing solution mining due to the trona depth.

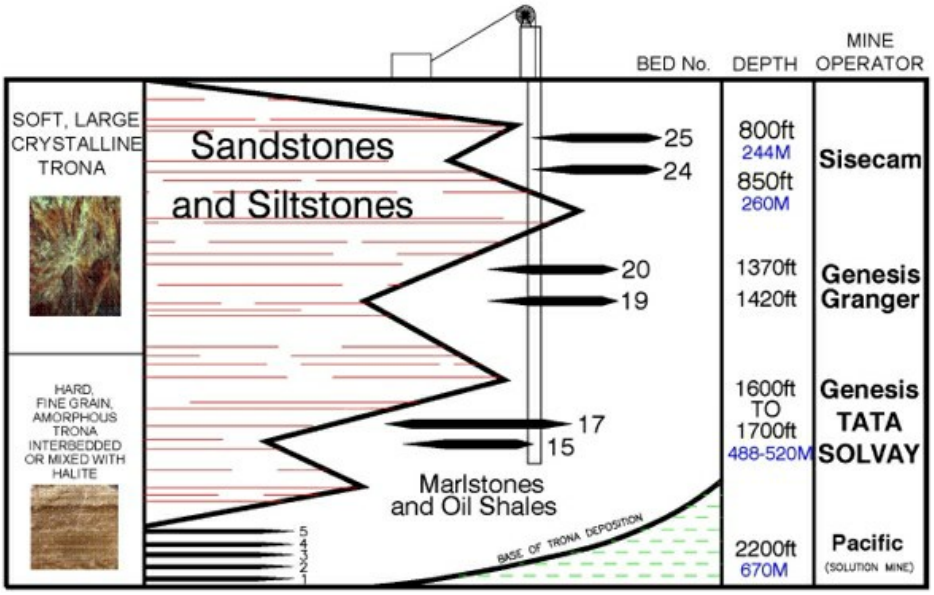


Figure 6.3 Schematic Section Through the Trona Deposits

Trona Bed 1 through 18 of the Lower Wilkins Peak are relatively tabular with a fine grain sugary appearance. Various amounts of halite are present and can become more salt, halite, than trona towards the southwestern portion of the depositional basin. Halite is a significant contaminate in the refining process and reduces recovery and increases production cost. A stable depositional environment is implied by uniformity and minimal variation of the depocenters of Beds 1 through 18.

Trona Beds 19 through 25 are relatively halite free and consist of amber translucent coarse-crystalline blades to coarse granular “sugary” textured masses. Trona Beds 19 through 22 are located in the northwestern corner of the Green River Basin saline depositional basin. Trona Beds 24 and 25, mined by Şişecam Wyoming, are located in the northeastern corner of the Green River Basin.

Figure 6.4 shows the areal extent of the major trona beds in the Green River Basin.

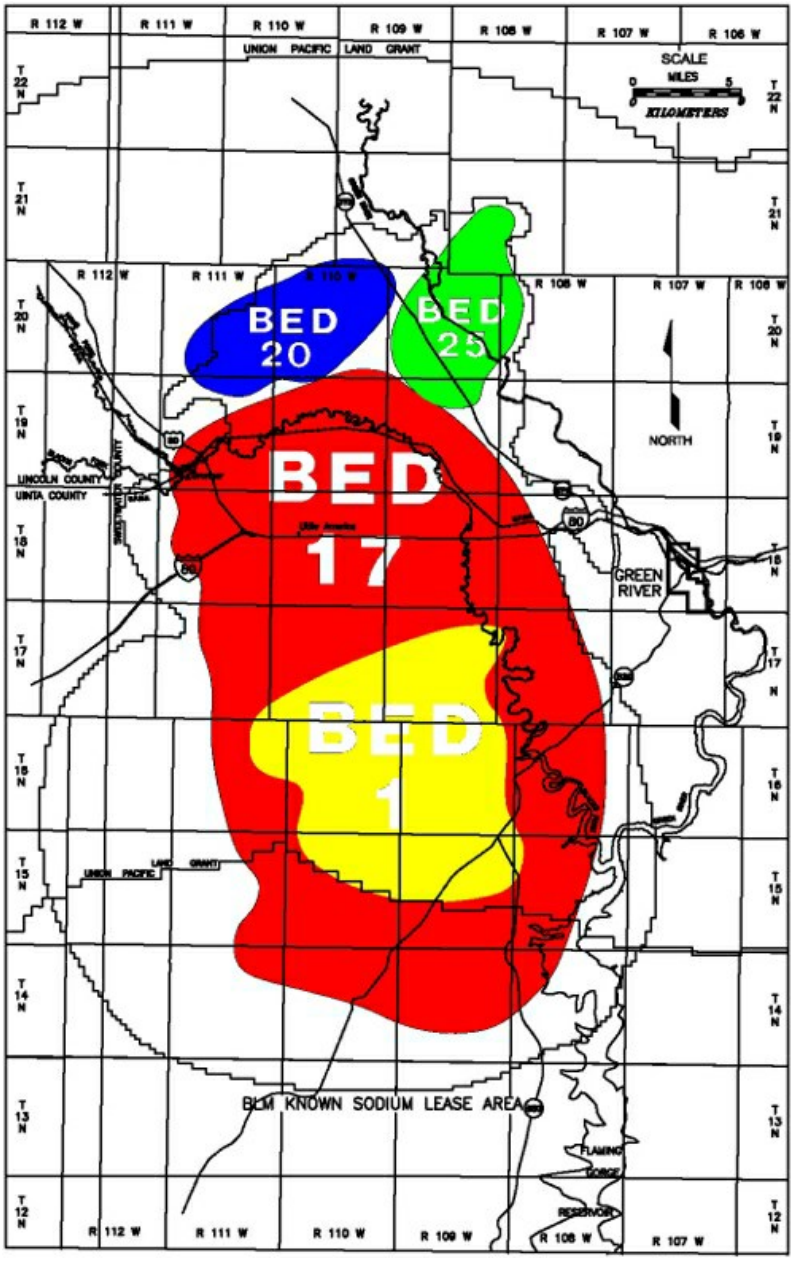


Figure 6.4 Green River Basin Trona Bed Extents

6.4 LOCAL GEOLOGY AND LITHOLOGY

6.4.1 Local Geology

Mineral reserves within the Şişecam Wyoming lease area are confined to Trona Beds 24 and 25. Isotope analysis of a volcanic layer, known as the Big Island Tuff, located between these beds, has dated deposition at approximately 49 million years. Local structural gradient is oriented west/southwest at a grade of approximately 50-feet per mile and was influenced by the structural high of the Rock Springs Uplift to the east. Overburden depths of Beds 24 and 25 increases along the strike of the dip from typically 800-feet to 1,100-feet with increasing surface topography. Figure 6.5 shows a generalized east-west cross section across the Big Island Mine property.

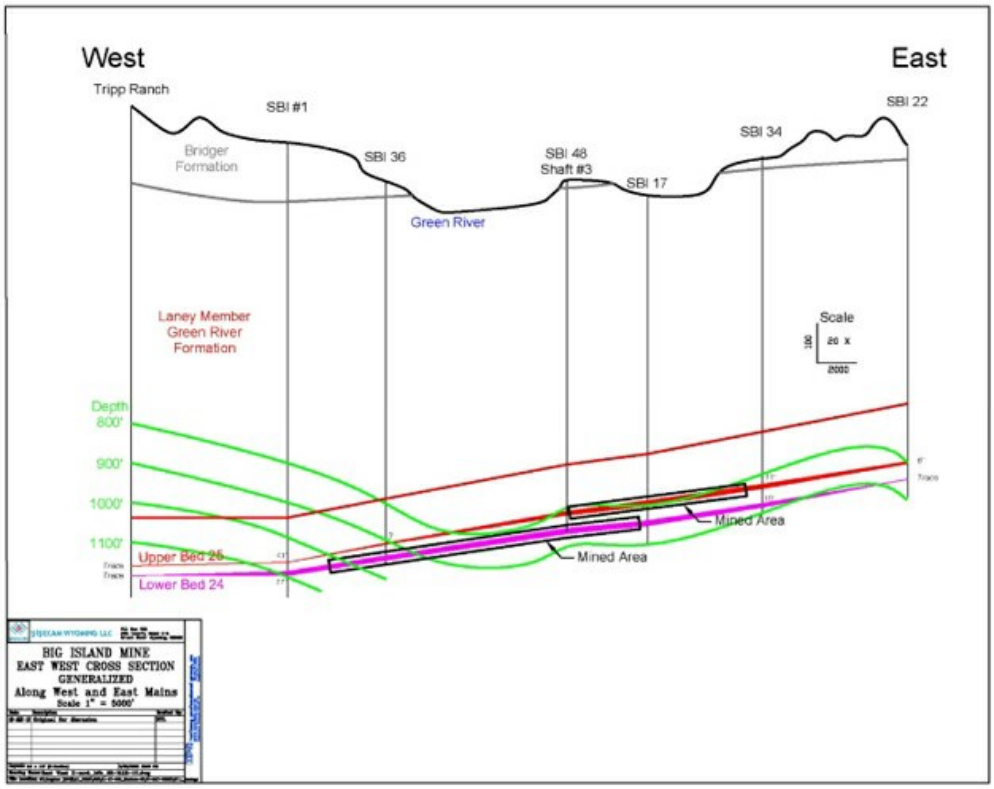


Figure 6.5 Generalized Cross Section – Bed 24 and 25

6.4.2 Trona Bed Lithology

A review of the exploration database and ore characteristics was initiated in 1999, by Korte and others, with greater emphasis on correlating mine observations with available drill core and lithological core descriptions. Mine mapping of trona ore thickness occurred along the perimeter of the mine developments as well as interior portions of the mine where access was available. A database of approximately 500 mine observations was developed. Documentation of this investigation was presented in 2002 with recommendations for continual study from supplemental exploration and mine observations. To date, the mine observations exceed over 4,000 measurements with emphasis on active mine areas. Mine observations in critical areas are on a 100-foot spatial density.

The 1999 investigation identified four distinct lithological horizons (geological facies changes) within each bed that may represent repetitive depositional occurrences. These horizons have been designated Trona 1 through Trona 4, or T1 through T4. The basal unit labeled T1 is composed of very fine grain sugary textured trona forming lenticular pods of varying thickness and is probably post depositional in origin. In the original 1980 database, sometimes the T1 was included, and sometimes it was excluded. T1 unit is not part of the reserve base for this study because it is separated from the mineable horizons by several layers of oil shales and marlstone. Dilution from these non-soluble minerals decreases ore grade to unacceptable levels.

The intermediate T2 through T4 horizons are currently mined by Şişecam Wyoming with the continuous miner fleet. During mining, the T4, and occasionally T2, are omitted. The T2 unit is stratigraphically at the basal contact with the floor shales. T2 is separated from the T3 unit by a thin marker seam of shale. This marker seam assists the miner operator with horizon control. The T4 unit is located at the top of the trona bed and represents the conclusion of deposition. An increase in insoluble materials in the T4 unit can reduce grades in this horizon. The T3 unit is the primary high-grade horizon. Only the T2 through T4 horizons are considered ore in this reserve update. Figure 6.6 illustrates this general lithological section.

The geological depositional and post depositional features, listed above, have been recognized from the mine mapping, and confirmed by several thousand mine observations.

Prior to trona formation, a layer of rich organic marlstone was deposited. This material can be classified as an oil shale but does not have sufficient organics to combust. Initial trona deposition of both beds was precipitated as layers up to 3-feet thick of a finer texture with some organic material giving this layer a darker color, illustrated as T2 Ore Zone on Figure 6.6 lithological section. An interruption of trona deposition is illustrated by the occurrence of a laminated marlstone. The marker seam might represent a brief climate change or a storm event, washing clay material into the lake. Subsequently, the primary trona precipitation followed as illustrated by T3 Ore Zone with purities up to 99%. Closure of trona precipitation is illustrated as T4 Ore Zone and contains greenish-grey marlstone lamination resulting in a decrease in quality. Post-deposition fluid migration from below produced a secondary layer of trona illustrated as T1 Zone. This zone probably was the result of hydrofracturing to floor shales to form lenses of trona varying in thickness from zero to six feet. The T1 unit has a fine sugary grain texture and can contain organics associated with the oil shales. Şişecam Wyoming's mining is focused on a Mineable Ore Zone of T2 through T4 containing an average grade exceeding 89%.

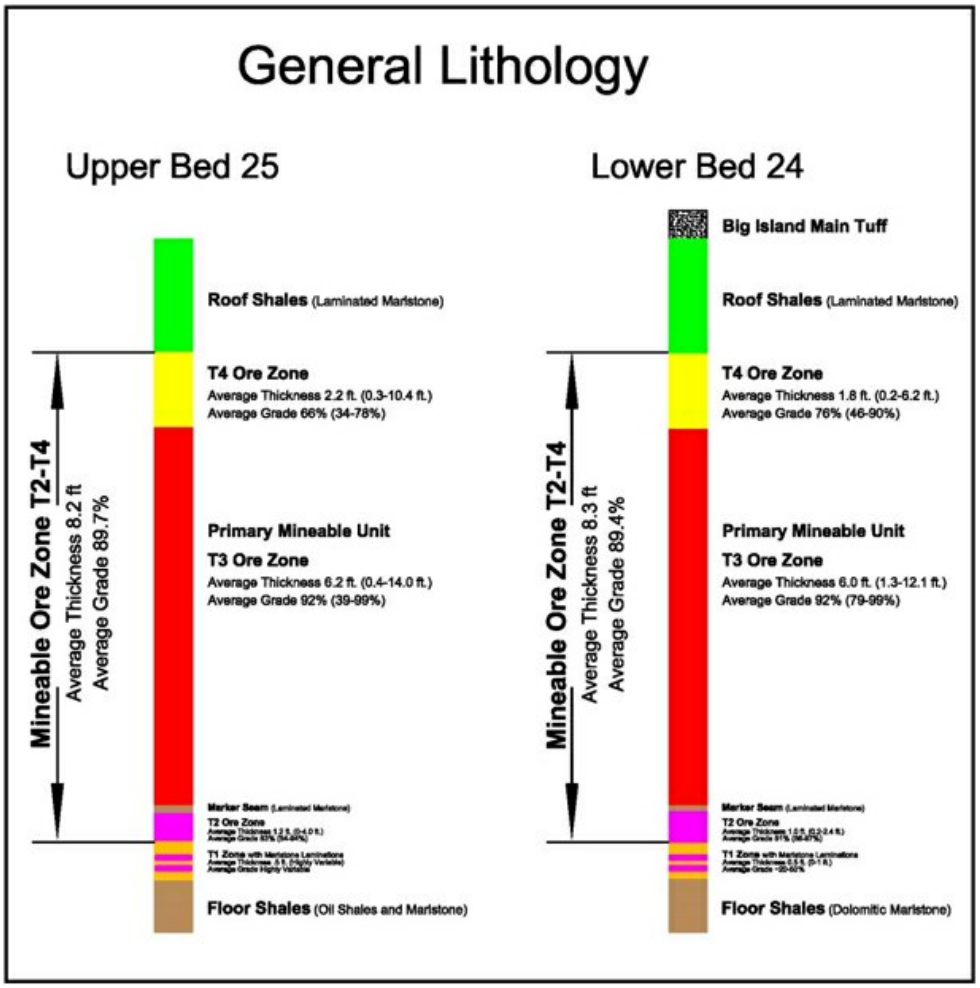


Figure 6.6 Trona Bed 24 & 25 Lithological Section

Interburden between Beds 24 and 25 is composed of laminated dolomitic marlstones with occurrences of volcanic tuff laminations and layers. Within the interburden are zones of organic rich marlstones and numerous occurrences of an associated mineral, shortite (calcium sodium carbonate).

Overburden above Bed 25 is composed of the same material listed above with increasing layers of hard dolomitic cemented detrital silts and fine grain sands. The detrital sediment probably represents storm events.

Other than microscopic material and algal debris within the trona, no fossils have been observed in trona beds.

6.4.3 Sedimentary Structures

Depositional and post-depositional sedimentary structures have been observed in the Şişecam Wyoming Mine and have had some impact on production grades and/or mining. These structures include:

Polygonal, vertically oriented, clay filled features are common, suggesting intense evaporation and desiccation, resulting in the formation of large “mud-cracks” within the deposit. Şişecam Wyoming Bed 25 exhibits these features in greater detail than Bed 24, Figure 6.7.

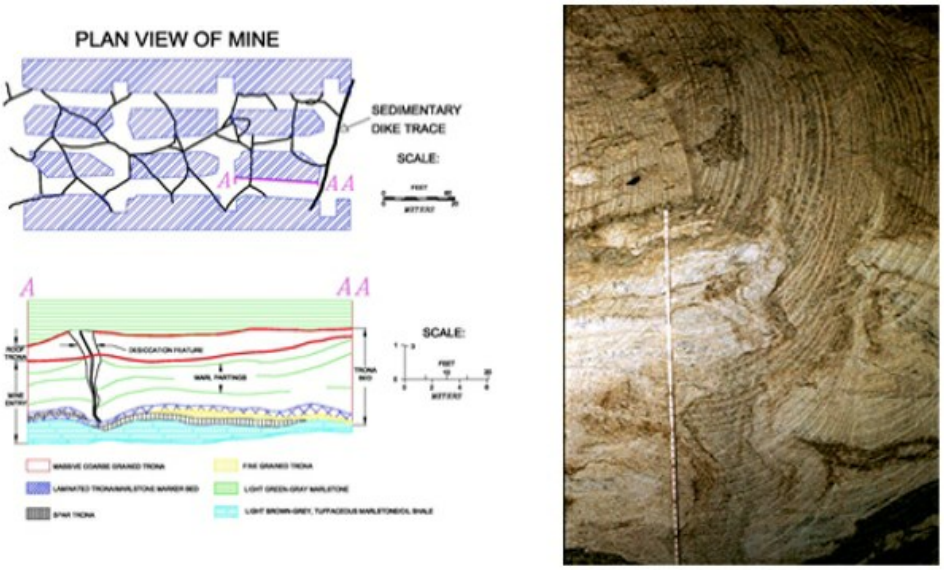


Figure 6.7 Filled Desiccation Crack within Trona Bed

“Blow-outs” occurring in both beds, represent a massive dewatering event from vertical brine movement eroding the trona bed. Results of this movement have been observed to completely obliterate the beds from a 12-foot seam thickness to zero within a 50-foot distance span, Figure 6.8.

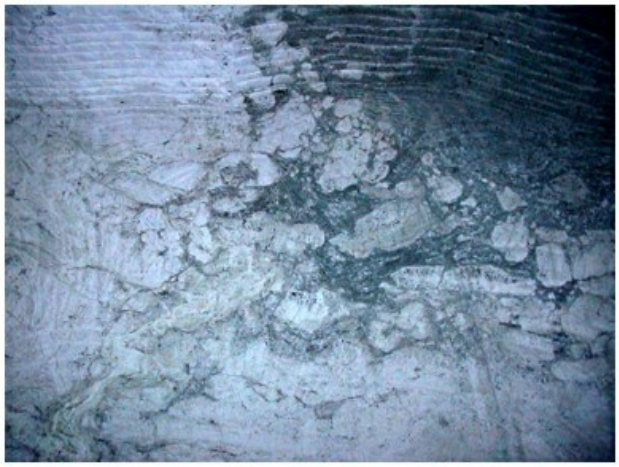


Figure 6.8 Blow-out Feature within Trona Bed

Geological faulting, movement, and fracturing have been observed in Bed 25. The occurrence of locally identified “root-beer” seams is associated with this type of disturbance, Figure 6.9.

Figure 6.9 Geologic Faulting within Trona Bed

Post-depositional dissolution from moisture/groundwater has been observed in the Lower Bed 24. Relatively isolated, the trona bed appears to be dissolved from the top after deposition, resulting in thinning of the bed and an increase in insoluble content in the upper portion of the seam, Figure 6.10.

Figure 6.10 Post Depositional Dissolution within the Trona Bed

Post-depositional soft sediment folding and rolling of the ore bodies (observed in both beds), Figure 6.11.

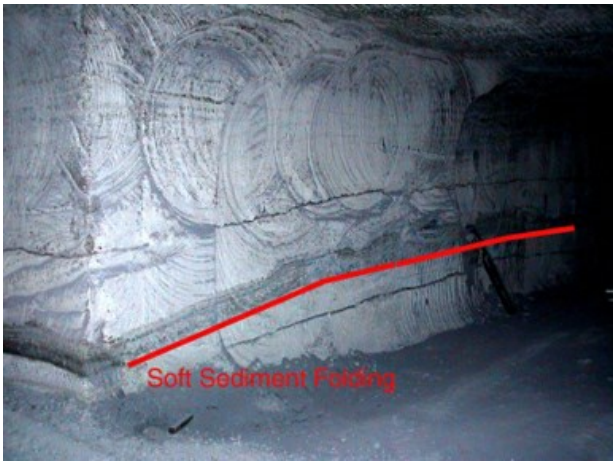


Figure 6.11 Post Depositional Soft Sediment Folding within the Trona Bed

Figure 6.12 Post Depositional Secondary Deposition of "Root Beer" trona

"Root Beer" trona is confined to the eastern half of Trona Bed 25, Figure 6.12. Sedimentary structure of the "root" trona" is perpendicular to the bedding of Bed 25. Crystal orientation implies deposition under compressive force such as depositional sediment weight.

Originally, the trona beds were formed close to sea level but now reside at a mile above sea level. During this transition period, compressional forces squeezed the tabular deposits. Where trona was thick and competent, little impact occurred, but as the ore bodies thin and become less competent, pinching and rolling could occur. Severe seam rolling can result in localized production grade dilution from increased insoluble minerals at the basal contact.

7.0 EXPLORATION

Exploration drilling has been the primary method to delineate trona Beds 24 and 25. The former Stauffer Chemical Company initiated trona exploration in August 1959 and completed 26 exploration drill holes by August 1960. Four supplemental exploration drill holes were completed in 1967 and the acquisition of 2-1/4 Sections from the State of Wyoming and private ownership. Exploration activity increased substantially in the late 1970s and early 1980s more than doubling the database with 39 additional drill holes, bringing the total to 69 borings. Two solution wells were drilling in 1994 bringing the total to 71. The final 10 exploration drill holes were completed from 2000 to 2011. An additional 12 borings were drilled by Phillips Petroleum and Allied Chemical in 1965 and 1978 respectively. These drillings are mostly to the south of Şişecam's current Mining Permit Boundary

Supplementing the surface to bed drilling are bed-to-bed borings that total 55 holes. Thirty-four bed-to-bed holes were drilled in the 1960's to 1979 to support two seam mining. Ten additional bed-to-bed holes were drilled to delineate the Bed 24 northeast resources. In 2022, Şişecam Wyoming drilled eleven bed-to-bed exploration core holes from existing Upper Bed 25 working into the unmined Lower Bed 24 trona seam.

This brought the total number of exploration drill holes by Şişecam to 136 and an additional 12 holes by outside firms for a total of 148 borings.

Enhancing this data set are over 4,000 observations and measurements from the existing mine developments.

In general, the core samplings were collected from each boring and prepared for analysis. Methodology utilized for coring varied through time and has included mud drilling, saturated brine drilling, air-foam drilling, wireline drilling and continuous coring from surface. A limited number of borings were logged with geophysical techniques including gamma, sonic, neutron, caliper, and high-resolution rock mechanics tools.

Only four of the 30 exploration drill cores from the 1959 to 1967 drilling programs have survived. The more recent core from 1975 through 2011 is stored in the mine at a constant climate. Verification of trona thickness and quality has been difficult for the 1975 through 1980 exploration cores due to decomposition and desiccation of the marlstone clays.

No supplemental exploration has been conducted since 2022, and drilling records remain unchanged. Mine observations from Şişecam's 2020 through 2024 mine advance in the northeastern and southern portions of Bed 25 and eastern portions of Bed 24 have been incorporated into this analysis.

Over his years of work on this property Mr. Leigh has documented and verified the location of all surface drill holes outside the plant footprint with handheld GPS.

Since 2019 the only mining in Bed 24 was the extensions of the LB North Mains, and subsequent test panels towards the west, Two-Seam area. Examination of this area did not indicate any requirement to modify the Bed 24 geologic model.

Table 7.1 shows the history of the exploration drilling on the Big Island Mine, Figure 7.1 and Figure 7.2. illustrates the location of the exploration drilling.

TABLE 7.1
BIG ISLAND MINE EXPLORATION DRILLING HISTORY

Surface Exploration Drilling						Internal Mine Bed to Bed Drilling		
SBI Hole Number	Date Drilled	Logged By:	SBI Hole Number	Date Drilled	Logged By:	SBIU Hole Number	Date Drilled	Logged By:
1	8/19/1959	LEM	54	5/18/1979	CAD	SBIU-06	o Date, 1960's	LEM
2	8/27/1959	LEM	55	11/19/1978	CAD	SBIU-07	o Date, 1960's	LEM
3	9/7/1959	LEM	56	7/ /1979	CAD, CJF	SBIU-08	o Date, 1960's	LEM
4	9/17/1959	LEM	57	5/6/1979	CAD	SBIU-09	o Date, 1960's	LEM
5	9/25/1959	LEM	58	9/1/1978	CAD, PMM	SBIU-10	o Date, 1960's	LEM
6	10/4/1959	LEM	59	7/31/1979	CAD, CJF	SBIU-11	o Date, 1960's	LEM
7	10/10/1959	LEM	60	6/23/1979	CAD, CJF	SBIU-12	o Date, 1960's	LEM
8	1959	LEM	61	6/ /1979	CAD, CJF	SBIU-13	8/7/1970	RLP
9	10/25/1959	LEM	62	8/14/1979	CAD, CJF	SBIU-14	12/8/1970	RLP
10	11/2/1959	LEM	63	5/15/1980	CAD	SBIU-15	12/ /1970	RLP
11	11/12/1959	LEM	64	7/31/1980	CAD	SBIU-16	1/17/1974	RLP
12	5/28/1960	LEM	65	6/13/1980	CAD	SBIU-17	1/21/1974	RLP
13	5/30/1960	LEM	66	5/21/1980	CAD	SBIU-18	1/ /1974	RLP
14	6/2/1960	LEM	67	6/26/1980	CAD	SBIU-19	2/5/1974	RLP
15	6/6/1960	LEM	68	8/3/1980	CAD	SBIU-20	2/23/1974	RLP
16	6/10/1960	GLF	69	7/13/1980	CAD	SBIU-21	4/30/1974	RLP
17	6/16/1960	GLF				SBIU-22	3/15/1974	RLP
18	6/26/1960	GLF	Sol. Wells			SBIU-23	5/17/1974	RLP
19	6/26/1960	GLF	70	1994	CAD	SBIU-24	2/2/1976	RLP, CAD
20	7/5/1960	GLF	71	1994	CAD	SBIU-25	2/16/1976	RLP, CAD
21	7/4/1960	GLF				SBIU-26	2/25/1976	RLP, CAD
22	7/8/1960	GLF	OCI			SBIU-28	5/17/1976	RLP, CAD
23	7/13/1960	GLF	72	12/20/2000	RTL	SBIU-29	7/ /1976	RLP, CAD
24	7/11/1960	GLF	73	6/23/2002	RTL	SBIU-30	o Date, 77-79	RLP, CAD
25	7/22/1960	GLF	74	6/30/2002	RTL	SBIU-31	o Date, 77-79	RLP, CAD
26	7/17/1960	GLF	75	7/10/2002	RTL	SBIU-32	o Date, 77-79	RLP, CAD
27	7/28/1967	RLP	76	7/15/2002	RTL	SBIU-33	o Date, 77-79	RLP, CAD
28	10/13/1967	RLP, CJW	77	7/24/2002	RTL	SBIU-34	o Date, 77-79	RLP, CAD
29	10/13/1967	RLP, CJW	78	8/20/2011	RTL			
30	10/28/1967	RLP, CJW	79	8/23/2011	RTL	D02-1	11/4/2002	RTL
31	9/12/1975	RLP	80	9/9/2011	RTL	D02-2	11/7/2002	RTL
32	10/9/1975	RLP	81	9/12/2011	RTL	D02-3	11/11/2002	RTL
33	10/27/1975	RLP	Phillips Petroleum			D02-4	11/14/2002	RTL
34	7/10/1976	RMS	06-T	8/30/1965	GKB	D02-5[1]	11/17/2002	RTL
35	8/27/1976	RMS	07-T	9/13/1965	GKB	D02-6	11/20/2002	RTL
36	8/27/1976	RMS	08-T	9/22/1965	GKB	D02-7	11/21/2002	RTL
37	8/14/1976	RMS	09-T	9/30/1965	GKB	D02-8	12/4/2002	RTL
38	7/26/1976	RMS	11-T	10/6/1965	GKB	D02-9	12/4/2002	RTL
39	9/14/1976	RMS	12-T	10/11/1965	GKB	D02-10	12/9/2002	RTL
40	7/2/1977	DJF	16-T	11/1/1965	GKB			
41	8/5/1977	DJF	17-T	11/4/1965	GKB	D22-01	5/9/2022	AG
42	10/1/1977	CAD	19-T	11/8/1965	GKB	D22-02	5/14/2022	AG
43	10/ /77	CAD	Allied Chemical			D22-03A[2]	5/19/2022	AG
44	9/26/1977	CAD	AC-34	5/17/1978	BH	D22-03B	5/27/2022	AG
45	10/31/1977	CAD	AC-33	1978	BH	D22-04	6/9/2022	AG
46	11/15/1977	CAD	AC-36	1978	BH	D22-05	6/14/2022	AG
47	11/ /1977	CAD	Bed to Bed Holes			D22-06A[2]	6/21/2022	AG
48	5/28/1978	CAD	SBIU-01	o Date, 1960's	LEM	D22-06B	6/22/2022	AG
49	10/10/1977	CAD	SBIU-02	o Date, 1960's	LEM	D22-07	6/27/2022	AG
50	9/7/1978	CAD	SBIU-03	o Date, 1960's	LEM	D22-08	7/1/2022	AG
51	/ /1978	AD, RLP, DJ	SBIU-03A	o Date, 1960's	LEM	D22-09	7/14/2022	AG
52	9/22/1978	CAD, AMM	SBIU-04	o Date, 1960's	LEM	D22-10	7/25/2022	AG
53	5/7/1979	CAD	SBIU-05	o Date, 1960's	LEM	D22-11	7/30/2022	AG

[1] High Core Loss
[2] Drill hole not completed

LEM: L. E. Mannion RMU: R. M. Smith GKB GK Brasher
RLP: R. L. Parratt CAD: C. A. Dickerson RTL: R. T. Leigh
CJW: C.J. Wendt BH Ben Hohler AG Alpha Geoscience

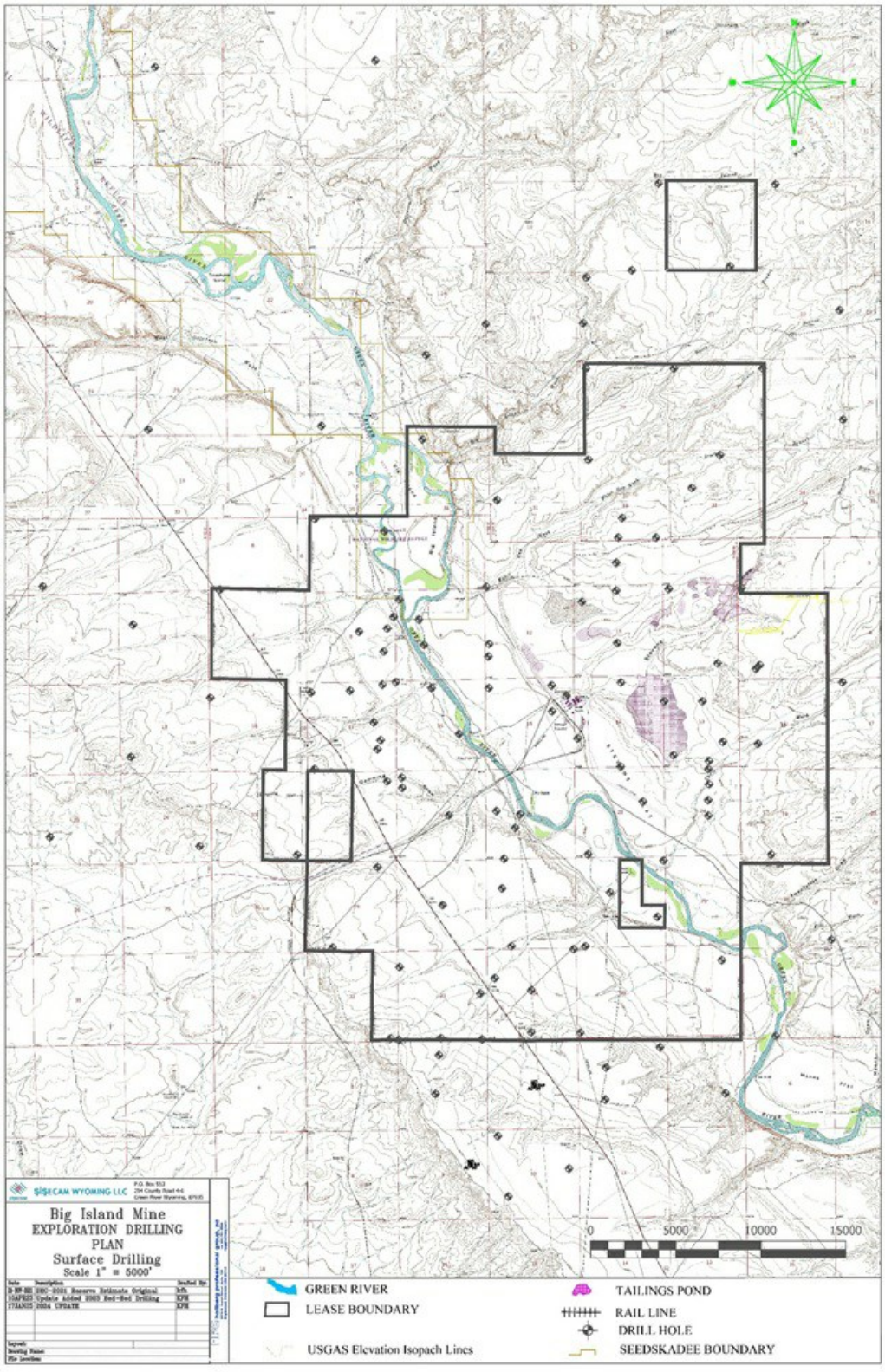


Figure 7.1 Surface Exploration Drilling Locations with Surface Topo

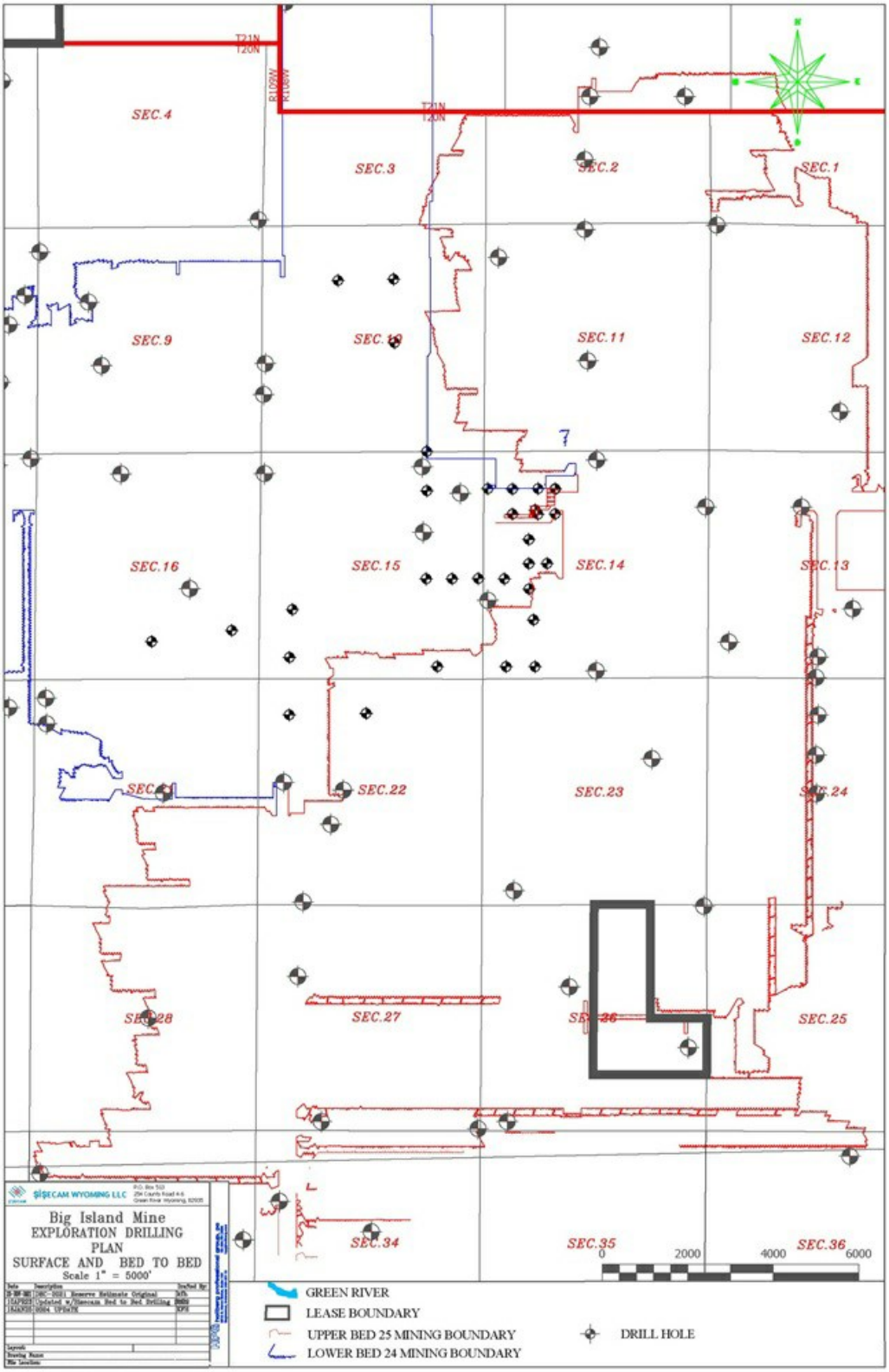


Figure 7.2 Underground Exploration Drilling Locations with Upper and Lower Bed Mining Outlines

8.0 SAMPLE PREPARATION, ANALYSIS, AND SECURITY.

For recent exploration drilling the core samples were examined, photographed, and logged in the field then boxed, labeled, and prepared for transportation. Early exploration had minimal documentation on preparation and core logging. More recent exploration campaigns are better documented with photographs of the core prior to boxing.

Standard practice was to split the core samples along the length of the core with half the sample sent to in-mine storage. Sample intervals were generally between six and twelve inches in length. The split sample was then analyzed by the Şişecam plant laboratories. The Şişecam Wyoming laboratory has multiple certifications including ISO 9001-2015 and NSF. The lab has multiple well documented quality control and quality assurance processes which were reviewed during earlier site visits.

Earlier core samples were subjected to external and internal analysis. Analytical methodology evolved over time. Initially, samples were reported for sodium carbonate and sodium bicarbonate content with weight percent trona calculated. The exact procedure for the early analysis is unknown. Analysis of more recent core simulates the existing refinery process:

1. Crushing to 3/8 inch or less;
2. Dried in oven;
3. Dissolved with water;
4. Filter insoluble;
5. Prepare filtrate;
6. Titration with acid;
7. Calculate total alkalinity; and
8. Convert to weight percent trona.

Records from the exploration projects are stored in a locked storage location in Şişecam Wyoming's technical office building at the mine site with the core samples stored in the mine where the stable humidity and temperature helps preserve the samples.

The sample preparation, analysis, quality control, and security procedures used by the Şişecam Wyoming Operations have changed over time to meet evolving industry practices. Practices at the time the information was collected were industry-standard, and frequently were industry-leading practices. In HPG's opinion, the sample preparation, analyses, and security procedures at the mine are acceptable, and are adequate for mineral resource and mineral reserve estimation and mine planning purposes.

9.0 DATA VERIFICATION

9.1 SITE VISITS

In performance of these services and preparation of this review, Mr. Hollberg and Mr. Leigh made site visits to the Big Island Mine on November 7th, 11th, and 13th, 2024.

9.1.1 Mine Visit

On November 11, 2024, Mr. Hollberg examined the underground with John Lewis, Şişecam Wyoming's Engineering Superintendent. Areas examined during this visit included:

- Lower Bed (LB) 24
  - LBNE Mains;
  - LBNE 5W Panel Advance – two-seam mining;
  - LBNE 2W Panel Retreat– two-seam mining;
- Upper Bed (UB) 25
  - UBE Maintenance Shop;
  - UBE P9S;
  - UBSW Panel 11W;
  - UBSW Panel 12E;
  - UBSW Panel 13E; and
  - UBSW BUTTS; and
- Two Hoist Building, Material Hoist Upgrade.

Mr. Leigh visited the mine with John Lewis, Şişecam's Engineering Superintendent, on November 13th examined workings and procured thickness measurements for confirmation of drill hole data. During his visits he assessed the following areas:

- Lower Bed 24
  - LBNE Mains from the LBE Mains to the current Butts;
  - LBNE 5W Panel X-Cut 32 North;
- Upper Bed 25
  - UBE P9S;
  - UBE P8S X-Cut 29 to the end of Panel;
  - UBSW P12E Neck down;
  - UBSW 11W North Subpanel #1;
  - UBSW 11W North Subpanel #2 End of Panel;
  - UBSW Subpanel #12 West;
  - Mr. Hollberg supplemented trona ore thickness and quality observations;
    - UBSW Panel 11W End of Panel;
    - UBSW 11W South Subpanel End of Panel X-Cut 14;
    - UBSW Buttes X-Cut 277;
    - UBSW Panel 13E; and
    - UBSW Panel 12E X-Cut 24 South.

The following are some general observations based on these examinations:

LB Two Seam Mining

The November 2024 examination of the LB two-seam mine workings indicated favorable ground conditions with plus 12-foot thick trona. There was little if any floor heave, corner spalling or roof cutters. Mining was conducted in the LB in proximity to several exploration drill holes. These areas were examined and the reported trona thickness of these exploration drill holes were within one standard deviation of the in-mine observations. No sampling was performed to assess trona grades.

UBE Panel 8S and 9S

Since the 2021 Reserve Report, UBE Panel #8 South was developed to X-Cut 65 west. Increasing frequency of the floor horizon rolling up into the mining horizon with appearance of decreasing ore quality resulted in decreasing production grades and panel termination. Ore thickness variation ranging from 6.5-feet. to 9.9-feet. At X-Cut 50 east, ore quality improved with thickness ranging from 8.5-feet to 11-feet. It is noted that from X-Cut 29 east to the end of the UBE Panel #8 South, there is an increased prevalence of what is locally known as “Root Beer” trona, which is an indication of depositional alteration.

Mining is currently advancing UBE Panel #9 South. At the beltline of X-Cut 37 west, ore disruptions were encountered similar to that encountered near the termination of UBE Panel #10 South as reported in the 2021 Reserve Report. The ore disruptions and “Root Beer” trona occurrences extend at least back to X-Cut 30. The end of the advancing X-Cuts on the west side of UBE Panel #9 South did not exhibit such ore changes as of November 2024.

Figure 9.1 Ore Disruption, UBE Panel 9 South, X-Cut 37, Beltline

Upper Bed Southwest Panel 12 East Neck Down

UBSW P12E neck down is located in close proximity to exploration drill hole SBI 42. SBI 42 core description indicates trona was sampled in a depositional feature locally known as vertical mud seam. This feature results in a reduction of ore quality and the possibility of a bias ore thickness. At the UBSW P12E location, detailed measurements were taken to provide a representative trona grade and thickness for this area of the orebody. This change to the geologic model is not considered material.

Upper Bed Southwest #11 West

UBSW #11 West North Subpanels #1 and #2 were completed since the 2021 Reserve Report. Both Subpanels were concluded with only 17 and 15 X-cuts and terminated as a result of ore changes. Subpanel #1 observations did indicate a decrease in an average ore thickness of less than 9-feet. While Subpanel #2, located to the west of Subpanel #1, indicated some improvement with an average trona thickness of 9.4-feet. with a range between 8.2-feet. to 10.4-feet, the thickness variability resulted in deteriorating production quality.

Upper Bed Southwest Subpanel #12 West
UBSW Subpanel #12 West was terminated at the lease boundary at X-cut 12. Ore quality and thickness remain excellent with thicknesses exceeding 12-feet.

Other Mine Areas and Infrastructure
Pumping records from the LB West water inflow area were examined and continue to show reduction of the water elevation and retreat of the shoreline down dip as the mine dewaters this area at steady pumping rate of around 80 GPM.

9.1.2 Shafts and Hoisting Facilities

On November 11, 2024, Mr. Hollberg toured the mine hoisting facilities with Mr. Lewis. Şişecam has been working to upgrade and modernize its hoisting systems by updating the controls systems, motors, and braking systems. Since the 2021 TRS Şişecam has completed updates to the two production hoists Hoist #2 and Hoist #3 to allow for improved major component spares parts, redundancy, and current control systems that are supported by the manufacturers. Our November visit observed the preparation work for the replacement of the man and material Hoist #1 planned for completion in 2025. This is a needed update to the early 1960's hoist which is well past its service life.

9.1.3 Surface Facilities Site Visit

On November 11, 2024, Mr. Hollberg and Mr. Leigh met with Tyler Schiltz (Environmental Manager), Shannon Larson (QC QA Laboratory Supervisor), Mikail Demir (Technical Services Manager), and Jessica Annala (Accounting Manager) to review environmental compliance, quality control and analysis, financial and capital plans.

Discussions with Mr. Schiltz and Mr. Demir included environmental compliance, the tailings pond system and long-term tailings disposal, tailings dam safety, including dust control. The long-term site wide capital plans were reviewed.

The visit included examination of the Şişecam Wyoming surface processing facilities and tailings ponds with Steve Thompson (Project Specialist – Technical Services) and Don McCallum (Project Specialist – Technical Services). Discussions included plant maintenance, planned capital improvements, the tailings pond system and long-term tailings disposal coarse tailings project.

Surface facilities visited include the following:

- Units No 3 and No 4 filters, evaporators/crystallizers, and dryers;
- Unit 5 Filters, evaporators/crystallizers, and dryers;
- Unit 7 calciner, Verta-mill, dissolver, classifier;

- Unit 6 Standalone processing, crushing, calcining, dissolvers, classifier, filtration, evaporation/crystallization, thickeners, and tailings pumps;
- Tailings pond facilities, Pond 1, 2, 3, and 4.

The age of the facilities, 20 to 50 years, require good maintenance, repair and replacement to maintain consistent production. The visit and discussions confirmed that Şişecam continues to commit resources to maintain the production capacities of their facilities. Şişecam's future maintenance and expansion capital plans indicate a continued commitment to the facilities production capabilities. During the brief visit multiple areas were observed where significant capital expenditure has been expended to maintain and improve production. While HPG's examination was not a comprehensive analysis of each piece of equipment, Şişecam's long history of consistent soda ash production would not be possible without proper maintenance of processing facilities of this age.

Şişecam's Co-Gen facility is a state-of-the-art combined cycle gas turbine that supplies approximately 25 MW of electrical power to the site as well as producing excess steam for the production process and site heating. The gas turbine and heat steam recovery generator are approximately 60-65% efficient and use best available control technology (BACT) for emission control.

Şişecam's tailing facilities are over 60 years old but continue to be maintained and operated. Şişecam has been proactive to complete any required mitigation work identified by their close monitoring as well as frequent examinations by their long-time third-party consultant Barr Engineering. During the visit HPG observed the new tailings facility, Pond 2, which will be the primary storage area for the coarse tailings moving forward. Additional information on the Tailing Facilities is available in Section 17.4.

Şişecam's analytical laboratory contains up to date equipment and analytical capabilities. The lab processes both 'in stream' samples (dry trona and liquor) as well as final soda ash product testing. In previous visits, Ms. Larson walked HPG's representatives through a typical soda ash testing procedure, documentation, and sample retention for the final product. The lab continually sends portions of samples for third party verification of results. The lab is 9001:2015 certified and holds certifications for NSF, 2021 Halal, and Kosher-2021.

Additional information on Şişecam's production facilities can be found in Section 14.0 Processing and Recovery Methods and Section 15.0 Infrastructure.

9.2 GEOLOGIC DATA VERIFICATION

Şişecam Wyoming's available geologic data is well documented and has been vetted over the history of the property. The fact that the property has been in successful operation for over 60 years and has extracted trona from both beds gives confidence in the available geologic information and proposed mining methods.

Data density, or the spatial relationship between drill holes, has become more prevalent in industry classifications. Şişecam Wyoming's drill hole spacing was designed first to establish a resources area. Initially, twenty-seven exploration borings were completed on 1 to 2-mile spacing. Subsequent exploration developed the remaining 121 borings to increase the data density and to assist with mine planning and lease acquisitions. Trona exhibits greater continuity and less spatial variability than coal or metal deposits. There are many examples of evaporite deposits that have been developed on wider drill hole spacing than the recommended standards for other minerals. In comparison, while Şişecam Wyoming's drill hole spacing exceeds these recommendations, the historical record for the Şişecam Wyoming Big Island Mine demonstrates a reasonable correlation between drill hole data and available reserves.

In the above referenced 1999 work (Section 6.4.2), a database was created for each Trona Bed, 24 and 25, located within the Şişecam Wyoming lease area. That database was the basis of this MRE and previous estimates. Şişecam Wyoming provided available drill hole data for all 148 exploration borings including core descriptions, analytical results, available geophysical well logs, and available archived reserve reports. The 1999 review work expressed concern about the data quality of some of the older core analysis. There was concern that some of the reported analysis did not match the core descriptions indicating mislabeling or perhaps the core boxes broke and not properly sorted. The general analysis is considered correct, but some of the geologist logged the holes from the bottom up and others from the bottom down and as such the orientation of the analysis was questioned. For example, SBI-42, analysis appears to be reversed. Where possible the logs were vetted or corrected where definitive information was available. The best supplemental information is documentation of trona thickness observations from the existing mine developments collected over the past 25 years.

The exploration reports were evaluated for accuracy of trona picks for thickness and quality. The drilling database described has been spot checked multiple times over the long history of HPG's work at Şişecam. Additionally, whenever mine workings intersect or approach these drillings the associated workings have been examined to confirm the drilling data. Descriptions of the examinations undertaken for this effort are offered below. In general, exploration information matched published assessments.

A comparison of a trona thickness model based on mine observation points and a model derived from the drill hole data shows a reasonable correlation over the mined areas. In Bed 24, the mine observations averaged 11.7-feet thickness compared to 11.4-feet using the drill hole data over the same area. Bed 25 correlation resulted in similar results, with the mine observations model averaging 11.02-feet, while the drill hole data model averaged 10.7-feet. Example: In Bed 24, two exploration drill holes were recently encountered, D02-01, and SBI-17. In comparison, SBI-17 exploration thickness was 13.5-feet, and mine observations averaged 13.24-feet. Exploration drill hole D02-01 was defined as 10.4-feet and mine observations ranged from 10.0-14.0-feet, averaging 12.43-feet. In Bed 25 no exploration drill holes were encountered. However, ore thickness from mine workings in the vicinity of drill hole SBI-43 are estimated to average 11.2-feet vs a reported drill hole thickness of 11.69-feet. Mine observation points are based on the measured ore thickness at each point and not the total mining height providing a direct comparison to the drill hole data set.

In the 2013 and subsequent reports drill hole D02-05 was removed from the data base because of a high percentage of core loss in the area of the LB trona seam. Of two five-foot core runs over 2-feet of core was not recovered. In 2022 supplemental drilling was completed from the upper bed into Bed 24 greatly improving the confidence of the database. An opportunity exists to continue exploration drilling from the Upper Bed into Bed 24 to improve the data density.

In the 2021 report, the minable thickness of two drill holes were modified based on available mine measurements in the vicinity.

- Drill hole SBI-20, now within the Upper Bed East extension of the modified mains, was modified from 15.1-feet to 11.3-feet based upon nearby mine observations.
- Drill hole SBI-42, near the UBSW Butts extension, was adjusted from 14.3-feet with a grade of 83.9% to 13.87-feet and a grade of 91.5% based on the nearby mining indicating plus 11-feet of ore with good quality in the lower portions of the trona seam. This modification results in the area to the northwest to be classified as resources and reserves.
- As of date, analytical quality information was not completed for drill holes. D22-02, D22-03B, and D22-04, therefore quality information is omitted from the database. Trona thickness information remains.

No other changes were made to the geologic database.

HPG reviewed the recent exploration drilling information and concludes it meets industry standards. Comparison of drilling data with in-mine measurements generally concur with in-mine measurements with anomalies typically explained by localized trona bed disruptions described in Section 6.4. The successful mining of Bed 24 and Bed 25 over the long history of the property gives added validation of the exploration data, analysis and quality control. HPG concludes that Şişecam Wyoming's geologic data, procedures and processes are adequate for mineral resource and mineral reserve estimation and mine planning purposes.

10.0 MINERAL PROCESSING AND TRONA GRADE TESTING

10.1 CONVERSION OF TRONA TO SODA ASH

Trona is a compound of sodium sesquicarbonate with the following formula, $Na_2CO_3.NaHCO_3.2H_2O$. It is the combination of sodium carbonate and sodium bicarbonate. The finished product, soda ash, is sodium carbonate. In very general terms, the conversion of trona into soda ash is the conversion of the sodium bi-carbonate portion of the trona into sodium carbonate and then a purification process to remove the insoluble minerals by dissolution and recrystallization.

There are two primary ways in which sodium carbonate is recovered from the trona ore, the sodium sesquicarbonate process, and the monohydrate process. The main difference between these processes is when the bicarbonate is converted into carbonate. In the sesquicarbonate process, the trona ore is dissolved first and the conversion of the bicarbonate takes place by calcining the purified crystals. The monohydrate process converts the bicarbonate by calcining the dry ore in rotary kilns at temperatures between 150º and 200º C. Şişecam Wyoming uses the monohydrate process. The general formula for this conversion follows:

$$2NaCO_3 \blacklozenge NaHCO_3 \blacklozenge 2H_2O \rightarrow 3Na_2CO_3 + CO_2 + 5H_2O$$

By molecular weight:

$$2(226.03) / 3(105.98) = 452.06 / 317.94 = 1.4218$$

After calcining, the ore is dissolved in water to allow the insoluble minerals to be removed prior to recrystallization.

10.2 PROCESSING FACILITIES

Şişecam Wyoming's refining facility is well established and has been converting dry trona into salable soda ash for over 60 years. Over this period, much of the refining facility has been replaced or upgraded with newer facilities and equipment. Şişecam Wyoming currently is operating five soda ash processing units. Two ore calcining and dissolving units with four soda ash processing plants.

Unit 6 was constructed in 1998 and has its own crushing plant, rotary kiln, dissolvers, crystallizers, and TRM (tailings) pumps. In 2006, OCI Wyoming constructed a large rotary kiln and dissolver, Unit 7, capable of feeding liquor to the older crystallizer Units 3 through 5 and use the existing crushers and TRM facilities. In 2009 the Decahydrate plant was built and mining of the decahydrate crystals in the tailings pond was started as a supplementary liquor feed to the soda ash plants.

A more detailed discussion of the processing facilities is available in Section 14.0.

10.3 TESTING AND ANALYSIS

Şişecam has had an onsite laboratory throughout its history that is used to test and analyze plant feeds (trona), intermediate process streams (liquor) as well as the final product to ensure compliance with Şişecam published standards. The testing and analysis procedures and protocols are well established and have been developed and refined over the 60 years of operation. The laboratory contains up to date equipment and analytical capabilities and holds multiple certifications including ISO-9001:2015 and certifications for NSF, 2024 Halal, and Kosher-2024. The lab is regularly audited by the certification agencies as well as customer audits. Additionally, the Şişecam laboratory does regular blind testing with outside laboratories as part of their standard protocol.

Composite samples of the trona ore are generally tested for insoluble minerals, grade (total alkalinity), moisture and organics. Intermediate liquor testing is used to monitor efficiencies and help in the operation of the plant. Composite sample testing of the final soda ash product is done on every truck or train car shipped. This analysis looks at purity (Sodium Carbonate % and Sodium Oxide %), moisture, density, and any contaminates (sulfate, chloride and insoluble).

In HPG's opinion, the sampling methods, sample preparation, analyses, and security procedures at the mine are acceptable and are adequate for mineral resource and mineral reserve estimation and mine planning purposes.

11.0 MINERAL RESOURCE ESTIMATES

11.1 INTRODUCTION

HPG has organized the available data and information in order to complete this Mineral Reserve Estimate for December 2024 from a variety of sources including:

- Drill Hole data from 81 surface to bed core holes;
- Drill hole data from 57 bed-to-bed core holes;
- Drill Hole data from 12 surface to bed holes drilled by outside firms;
- In-mine measurements and observations; and
- Historical reports.

11.2 GEOLOGICAL AND MINERALIZATION MODELING

Carlson's Advance Mining module, StrataCalc, a supplement to Autodesk's AutoCAD, was utilized to create the geological models. Both programs are standard for the mining industry. Gridding with the triangulation module was used to evaluate the Şişecam Wyoming reserve database which provided the best routine for verification.

Carlson's Advance Mining module and StrataCalc, applies the gridding information within a user defined area (reserve area) and computes statistical parameters from the data set. Average thickness and grade values, area of the defined limits, volumes, and tonnages are posted as a spreadsheet output. Gridding density, contouring methods, volumetric computations, and bulk densities were unchanged from the previous study.

A bulk density of 133 pounds per cubic foot (2.13 g/cc), was applied to convert volumes to tonnage. Several published documents list bulk densities of trona between 2.11 and 2.17 g/cc.

Based on this data Figure 11.1 Upper Bed Isopach and Figure 11.2 Lower Bed 24 Isopachs delineate trona thickness and 75% grade for each bed.

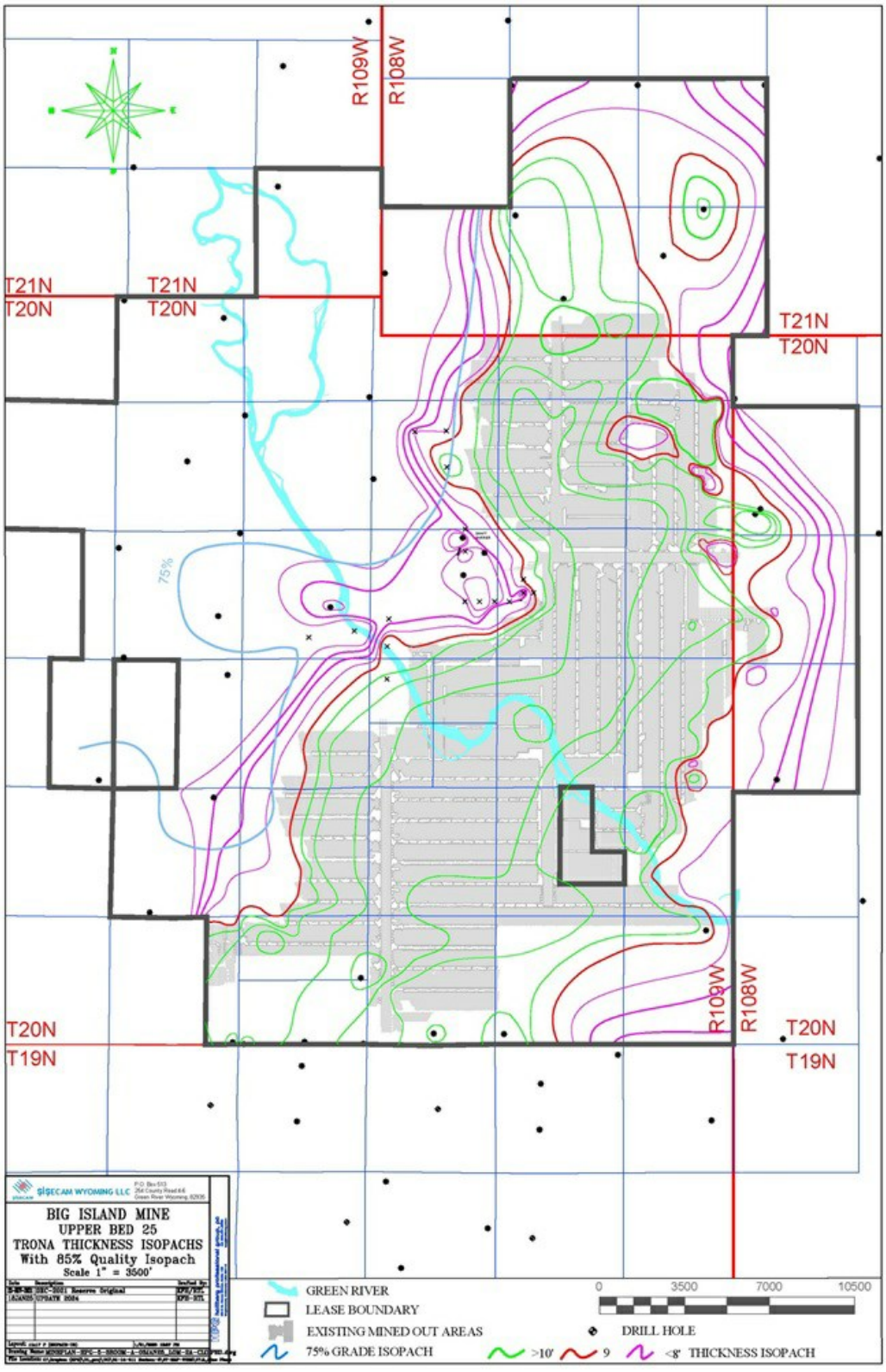


Figure 11.1 Upper Bed 25 Thickness Isopachs

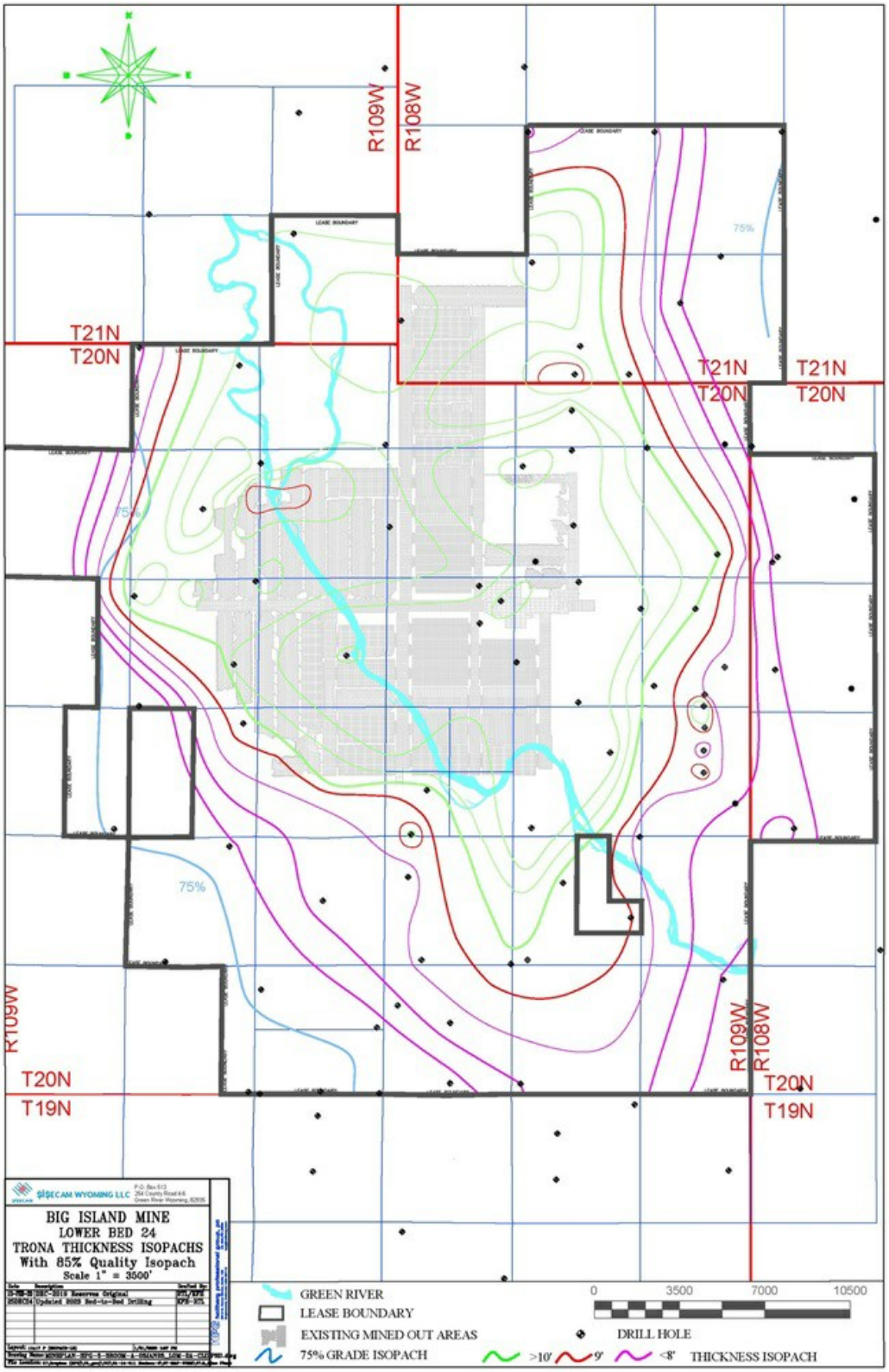


Figure 11.2 Lower Bed 24 Thickness Isopachs

11.3 MINERAL RESOURCE AND RESERVE CLASSIFICATION

The following definitions, which can be found in the Securities and Exchange S-K 1300 rules Subparts 229, 230, 239, and 249, have been used for this resource and reserve estimate.

Mineral resource:

A concentration or occurrence of material of economic interest in or on the Earth's crust in such form, grade or quality, and quantity that there are reasonable prospects for economic extraction. A mineral resource is a reasonable estimate of mineralization, taking into account relevant factors such as cut-off grade, likely mining dimensions, location, or continuity, that, with the assumed and justifiable technical and economic conditions, is likely to, in whole or in part, become economically extractable. It is not merely an inventory of all mineralization drilled or sampled.

Inferred mineral resource:

That part of a mineral resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. The level of geological uncertainty associated with an inferred mineral resource is too high to apply relevant technical and economic factors likely to influence the prospects of economic extraction in a manner useful for evaluation of economic viability. Because an inferred mineral resource has the lowest level of geological confidence of all mineral resources, which prevents the application of the modifying factors in a manner useful for evaluation of economic viability, an inferred mineral resource may not be considered when assessing the economic viability of a mining project and may not be converted to a mineral reserve.

Indicated mineral resource:

That part of a mineral resource for which quantity and grade or quality are estimated on the basis of adequate geological evidence and sampling. The level of geological certainty associated with an indicated mineral resource is sufficient to allow a qualified person to apply *modifying factors* in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Because an indicated mineral resource has a lower level of confidence than the level of confidence of a measured mineral resource, an indicated mineral resource may only be converted to a probable mineral reserve.

Measured mineral resource:

That part of a mineral resource for which quantity and grade or quality are estimated on the basis of conclusive geological evidence and sampling. The level of geological certainty associated with a measured mineral resource is sufficient to allow a qualified person to apply modifying factors, as defined in this section, in sufficient detail to support detailed mine planning and final evaluation of the economic viability of the deposit. Because a measured mineral resource has a higher level of confidence than the level of confidence of either an indicated mineral resource or an inferred mineral resource, a measured mineral resource may be converted to a proven mineral reserve or to a probable mineral reserve.

Modifying factors:

Are the factors that a qualified person must apply to indicated and measured mineral resources and then evaluate in order to establish the economic viability of mineral reserves. A qualified person must apply and evaluate modifying factors to convert measured and indicated mineral resources to proven and probable mineral reserves. These factors include but are not restricted to mining; processing; trona bed thickness, trona grade, infrastructure; economic; marketing; legal; environmental compliance; plans, negotiations, or agreements with local individuals or groups; and governmental factors. The number, type and specific characteristics of the modifying factors applied will necessarily be a function of and depend upon the mineral, mine, property, or project.

Mineral reserve:

An estimate of tonnage and grade or quality of indicated and measured mineral resources that, in the opinion of the qualified person, can be the basis of an economically viable project. More specifically, it is the economically mineable part of a measured or indicated mineral resource, which includes diluting materials and allowances for losses that may occur when the material is mined or extracted.

Probable mineral reserve:

The economically mineable part of an indicated and, in some cases, a measured mineral resource.

Proven mineral reserve:

The economically mineable part of a measured mineral resource and can only result from conversion of a measured mineral resource.

11.4 MINERAL RESOURCE ESTIMATE - PARAMETERS AND ASSUMPTIONS

In determining the resource parameters and assumptions for the Şişecam property, HPG considered the following circumstances:

- Şişecam's 60-year long history of successfully mining the deposit;
- Projected 40-year mine life and likely change in economics, mining, and processing methods over the life of the property;
- Mining methods of the other trona producers in the area;
- Mining methods of historically successful mining of similar laminar deposits including coal;
- The extensive database of in-mine measurements and drilling data; and
- HPG's knowledge operating and managing other trona mines in the area.

If both mechanical and solution mining is considered, a cutoff grade and thickness is not essential for trona mining in the Green River Basin. Other trona operations in the green river basin and other trona deposits are successfully using solution mining methods in thin and low grade trona areas. Because of Şişecam's proximity to the Green River this resource and reserve estimate does not consider solution mining due to its likely subsidence and impact to this major water source. Therefore, HPG is only considering mechanical mining of the deposit using established systems and methods.

Based on this knowledge and experience the following parameters were used to estimate the in-place trona resources that are considered to have reasonable prospect of economic extraction:

Parameters

- *Cut off* -Minimum 6-feet thick and >75% trona
- *Measured* - 1,320-ft radius from drilling and 1,320-ft from known workings (1/4 mile);
- *Indicated* - 3,960-ft radius from drilling and 3,960-ft from known workings (3/4 mile);
- *Inferred* - 7,920-ft radius from drilling and 7,920-ft from known workings (1/5 miles); and
- A soda ash price of $165 per ton was used to determine the stated trona resources.

Assumptions

Only trona on contiguous leases was considered resource for mechanical mining. Section 16, T21N, R108W was excluded from this estimate because this state lease is isolated from the other contiguous lease blocks. The one-mile isolation makes accessing this for mechanical mining unlikely.

The measured, indicated, and inferred distances are based upon known drilling, in-mine measurements, mining extents and experience with historically successful mine planning based on this information.

The cutoff thickness of six feet is based upon successful mining of similar deposits, to and even below 6-feet in thickness including trona, coal and potash. Additionally, other operations in the trona basin are mining to the 7-foot thickness in areas of their trona resources.

The cutoff grade of greater than 75% trona is based upon successful mining and processing of the lower grade trona Beds 19, 20 and 21 which were considered viable mining prospects by Texas Gulf Soda Ash (TGSA). TGSA operated as a dry mine from 1976 through 2002 mining Bed 20. The TGSA processing facility was designed to handle these lower grade ores and successfully mined and processed these lower grades.

11.5 GRADE ESTIMATION

For the purposes of this study, the minimum grade for the reported in-place resource tonnage is 75%. The Upper Bed 25 drill hole grades analysis range, for thicknesses greater than 6-feet, is 41.21% to 94.18%. All Upper Bed drill hole grades ranged from 38.64% to 98.81%. The Lower Bed 24 drill hole grades analysis range, for thicknesses greater than 6-feet, is 74.74% to 93.77%. All Lower Bed drill hole grades ranged from 74.74% to 94.10%. Based examination of available core and mine observations by previous geologist and others, many of the low-grade drill holes intersected vertical post depositional mud seams and are not considered representative of the overall average grade for the deposit at that particular location. Because of the limited core to definitively confirm this hypothesis, no changes were made to the database other than the three drill holes noted earlier.

Carlson's Advance Mining module, StrataCalc, was used to model the grades for each resource parameter for each trona bed. For the resource inclusive of reserves the following grades were estimated. Lower Bed 24 measured resources compute to have an average grade of 88.6% trona. Lower Bed 24 indicated resources have a computed average grade of 88.0% trona. The Upper Bed 25 computed measured resources grade is 87.6%, while the computed indicated resources grade is 87.3%.

Out-of-seam dilution during production has a significant impact on production grade. Production grade is the quality of the run of mine ("ROM") material sent to the refinery. Production quality is dependent upon the geological consistency of the ore body; the mining equipment used for extraction; and the operators mining skill. Ore body fluctuations are the greatest contributor to quality control issues. In general, with a 10-foot-high entry, 90% seam grade, 6-inches of waste will reduce production grade by 5%. Forecasting seam variability from the existing wide drill hole spacing is not possible. Currently, the best tool to help identify and predict problem areas is consistent mapping of the mine entries as mining advances providing feedback to operators and utilized in the short-term planning processes. When they are encountered, localized geological disturbances of the ore bed negatively impact the ROM grade.

11.6 IN-PLACE MINERAL RESOURCE ESTIMATE

Using the data provided by Şişecam Wyoming, HPG has completed its review of the Big Island Mine and concludes that the Big Island Mine's remaining leased and licensed Measured and Indicated in-place trona Resources ***exclusive of reserves*** as of December 31, 2024, total 153.3 million short tons (MST), of which 99.1 MST remain in the Lower Bed 24 and 54.3 MST remain in the Upper Bed 25. Measured In-Place Resources are calculated as 74.2 MST and Indicated In-Place Resources calculate as 78.7 MST and no Inferred In-Place Resources. Table 11.1 summarizes the estimated In-Place Trona Resource ***exclusive of the mineral reserves.***

Based on the current study, the Şişecam Wyoming Big remaining leased and licensed Measured and Indicated in-place trona Resources ***inclusive of reserves*** as of December 31, 2024, total 570.8 million short tons (MST), of which 377.9 MST remain in the Lower Bed 24 and 192.9 MST remain in the Upper Bed 25. Measured In-Place Resources are calculated as 300.1 MST and Indicated In-Place Resources calculate as 270.6 MST and Inferred In-Place Resources are calculated at 0.1 MST. Table 11.2 provides the In-Place Trona Resource ***Inclusive of the mineral reserves.***

Criteria for this analysis are based upon a 6.0-feet minimum ore thickness and 75% minimum seam grade. This Resource evaluation is based upon 93 exploration drill holes, 55 borings from the mine workings, and several thousand available mine observations and measurements. Of the 93 surface exploration drill holes, 28 borings are within the Lower Bed 24 Resource area and 21 borings are within the Upper Bed 25 Resource area. Additionally, this updated report considers the 2022 to 2024 mine advancements. The in-seam ore horizon includes the T2 to T4 zones and excludes the T1 zone as represented in Figure 6.6.

The reference point for the trona resources reporting is insitu inclusive of impurities and insoluble content. The grade is percent trona, sodium sesquicarbonate ($Na_2CO_3.NaHCO_3.2H_2O$), the double salt of sodium carbonate (soda ash) and sodium bicarbonate (baking soda).

Mineral resources are reported on a 100% ownership basis. Şişecam Wyoming is owned by Şişecam Chemicals Wyoming LLC ("Şişecam") 51% and by NRP Trona LLC ("NRP Trona") 49%.

Figure 11.3 and Figure 11.4 present the remaining in-place trona showing measured, indicated, and inferred resource areas.

TABLE 11.1
ESTIMATED IN-PLACE TRONA RESOURCES WITHIN BIG ISLAND
EXCLUSIVE OF RESERVES
MINING LICENSE AS OF DECEMBER 31, 2024
BASED ON $165/ TSA

	Measured Resource		Indicated Resource		Measured +Indicated Resources			Inferred Resource	
Bed	Tons (Millions)	Average Grade % Trona	Tons (Millions)	Average Grade % Trona	Tons (Millions)	Average Grade % Trona	Average Thickness (ft)	Tons (Millions)	Average Grade % Trona
Lower Bed 24	45.4	88.5	53.6	86.6	99.1	87.5	8.6	-	-
Upper Bed 25	29.3	84.9	25.0	86.2	54.3	85.5	7.9	-	-
Total	74.7	87.1	78.7	86.5	153.3	86.8	8.3	-	-

1) Numbers have been rounded; totals may not sum due to rounding.
2) Based on a 6-foot minimum thickness and a 75% minimum grade cut-off.
3) The point of reference is in-place (insitu) inclusive of impurities and insoluble content.

4) Mineral resources are current as of December 31, 2024, using the definitions in SK1300.
5) Mineral resources are reported on a 100% ownership basis. Şişecam Wyoming is owned by Şişecam Chemicals Wyoming LLC 51% and by NRP Trona LLC 49%.

The Mineral Resource ***exclusive*** of the mineral reserves is that portion of the ore body that has not been extracted because it was outside what is considered the economic limits, has been left in place to support the mine openings or has been sterilized by previous mining and cost-effective access is not considered practical. Mineral resources that are not mineral reserves do not have demonstrated economic viability.

TABLE 11.2
ESTIMATED IN-PLACE TRONA RESOURCES WITHIN BIG ISLAND
INCLUSIVE OF RESERVES
MINING LICENSE AS OF DECEMBER 31, 2024
BASED ON $165/ TSA

	Measured Resource		Indicated Resource		Measured +Indicated Resources			Inferred Resource	
Bed	Tons (Millions)	Average Grade % Trona	Tons (Millions)	Average Grade % Trona	Tons (Millions)	Average Grade % Trona	Average Thickness (ft)	Tons (Millions)	Average Grade % Trona
Lower Bed 24	186.5	88.6	191.3	88.0	377.9	88.3	9.8	0.10	87.6
Upper Bed 25	113.6	87.6	79.3	87.3	192.9	87.5	9.1	-	-
Total	300.1	88.3	270.6	88.1	570.7	88.0	9.6	0.10	87.6

1) Numbers have been rounded; totals may not sum due to rounding.
2) Based on a 6-foot minimum thickness and a 75% minimum grade cut-off.
3) The point of reference is in-place (insitu) inclusive of impurities and insoluble content.
4) Mineral resources are current as of December 31, 2024, using the definitions in SK1300.
5) Mineral resources are reported on a 100% ownership basis. Şişecam Wyoming is owned by Şişecam Chemicals Wyoming LLC 51% and by NRP Trona LLC 49%.

The Mineral Resource ***inclusive*** of the mineral reserves is that portion of the ore body that is considered either economically viable for mining and can be converted to reserves or of economic interest but considered outside the current economic limits.

Mineral resources are not mineral reserves. Mineral reserves are the economically mineable part of a measured or indicated mineral resource based upon application of modifying factors such as costs and revenues associated with the proposed operation and producing the final product in an economic and environmental assessment. Section 11.3 describes these factors. There is no certainty that any mineral resources in this report will ultimately be reclassified as reserves. Please refer to the note regarding forward-looking information at the front of the Report. Section 12.0 describes the estimated recoverable trona reserves.

11.6.1 Resource Estimate Reconciliation

Estimated trona resource exclusive of reserves has decreased from 162.3 MST (December 31, 2021) to 153.3 MST (December 31, 2024). These changes were due to reductions due to geologic model modifications, and barrier pillars protecting new shafts.

Estimated trona resource inclusive of reserves has decreased from 578.9 MST (December 31, 2021) to 570.7 MST (December 31, 2024). These changes were the net result of reductions from mining activities, additions due to lease acquisitions, reductions due to geologic model modifications, information from the 2022 to 2024 mining advance and barrier pillars protecting new shafts.

Table 11.3 and Table 11.4 illustrate the changes in resources between the 2021 and 2024 estimates exclusive and inclusive of reserves.

TABLE 11.3
CHANGE IN ESTIMATED IN PLACE TRONA RESOURCE 2021-2024 WITHIN BIG ISLAND
EXCLUSIVE OF RESERVES
MINING LICENSE AS OF DECEMBER 31, 2024
Based on $165/TSA [1-5]

	Measured Resource		Indicated Resource		Measured + Indicated Resources			Inferred Resource	
Bed	Tons (Millions)	Average Grade % Trona	Tons (Millions)	Average Grade % Trona	Tons (Millions)	Average Grade % Trona	Average Thickness (ft)	Tons (Millions)	Average Grade % Trona
Lower Bed 24	0.6	(0.2)	(0.4)	(0.3)	0.2	(0.2)	0.1	0.0	0.0
Upper Bed 25	(0.1)	(0.1)	(9.0)	(1.1)	(9.1)	(0.8)	0.3	0.0	0.0
Total	**0.5**	**(0.2)**	**(9.5)**	**(0.6)**	**(9.0)**	**(0.4)**	**0.2**	**0.0**	**0.0**

1) Numbers have been rounded; totals may not sum due to rounding.
2) Based on a 6-foot minimum thickness and a 75% minimum grade cut-off.
3) The point of reference is in-place (insitu) inclusive of impurities and insoluble content.
4) Mineral resources are current as of December 31, 2024, using depletion and the definitions in SK1300.
5) Mineral resources are reported on a 100% ownership basis. Şişecam Wyoming is owned by Şişecam Chemicals Wyoming LLC 51% and by NRP Trona LLC 49%.

TABLE 11.4
CHANGE IN ESTIMATED IN PLACE TRONA RESOURCE 2021-2024 WITHIN BIG ISLAND
INCLUSIVE OF RESERVES
MINING LICENSE AS OF DECEMBER 31, 2024
Based on $165/TSA [1-5]

	Measured Resource		Indicated Resource		Measured + Indicated Resources			Inferred Resource	
Bed	Tons (Millions)	Average Grade % Trona	Tons (Millions)	Average Grade % Trona	Tons (Millions)	Average Grade % Trona	Average Thickness (ft)	Tons (Millions)	Average Grade % Trona
Lower Bed 24	15.1	-0.2	-19.8	-0.3	-4.7	-0.2	0.3	-0.2	-1.2
Upper Bed 25	-6.5	-0.1	2.9	-0.3	-3.6	-0.2	0.5	0.0	0.0
Total	**8.6**	**0.0**	**-16.8**	**0.0**	**-8.2**	**-0.2**	**0.4**	**-0.2**	**-1.2**

1) Numbers have been rounded; totals may not sum due to rounding.
2) Based on a 6-foot minimum thickness and a 75% minimum grade cut-off.
3) The point of reference is in-place (insitu) inclusive of impurities and insoluble content.
4) Mineral resources are current as of December 31, 2024, using depletion and the definitions in SK1300.
5) Mineral resources are reported on a 100% ownership basis. Şişecam Wyoming is owned by Şişecam Chemicals Wyoming LLC 51% and by NRP Trona LLC 49%.

11.7 UNCERTAINTIES (FACTORS) THAT MAY AFFECT THE MINERAL RESOURCE ESTIMATE

Areas of uncertainty that may materially impact the mineral resource estimates include:

- Changes to long-term soda ash price and exchange rate assumptions;
- Changes in local interpretations of trona seam thickness and grade such as sedimentary structures described in Section 6.4.3;
- Changes to geological and grade shape, and geological and grade continuity assumptions;
- Changes to soda ash recovery assumptions;
- Changes to the forecast dilution and mining recovery assumptions;
- Changes to the cut-off values applied to the estimates;
- Variations in geotechnical (including seismicity), hydrogeological and mining method assumptions; and
- Changes to environmental, permitting, and social license assumptions.

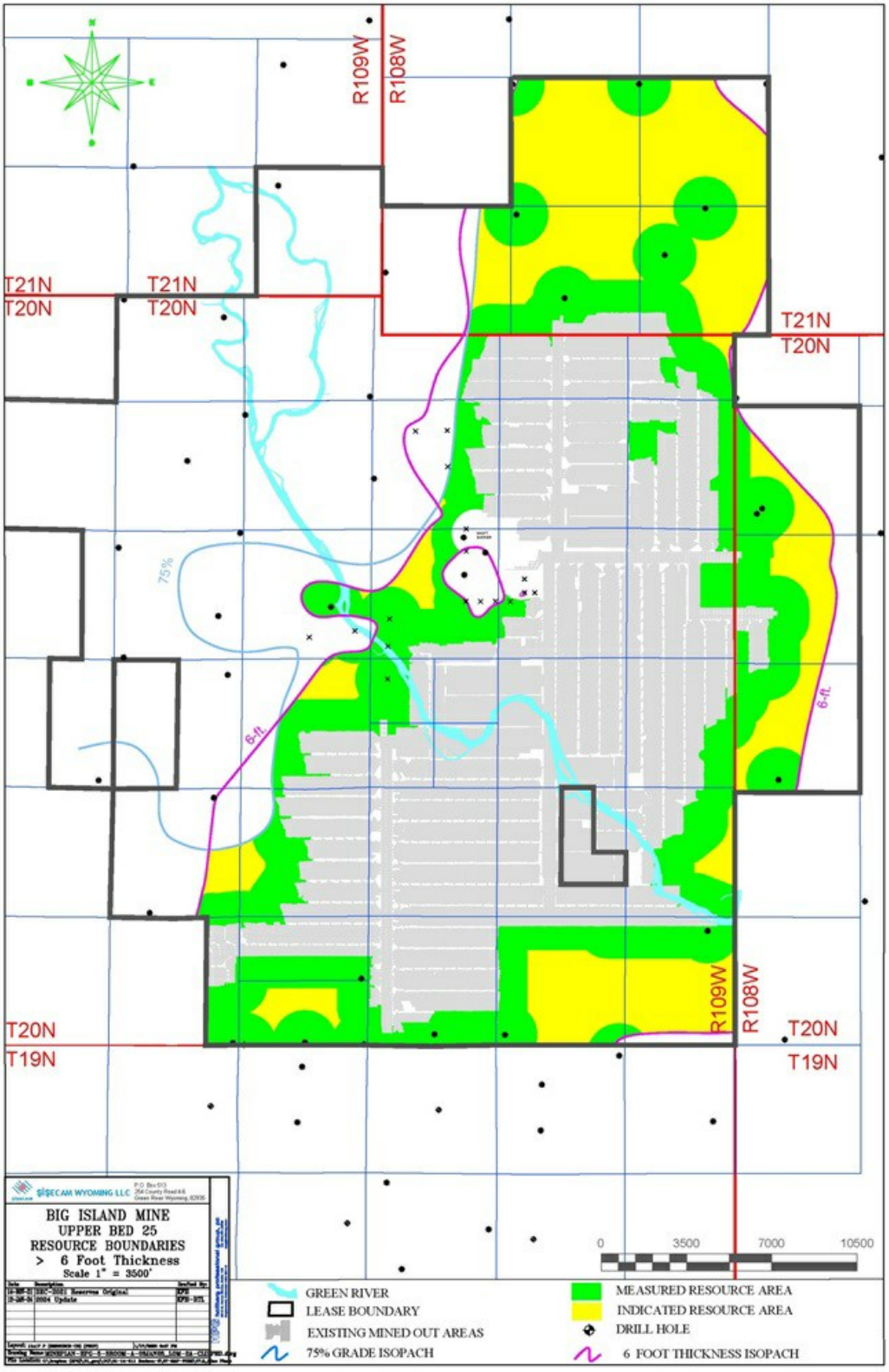


Figure 11.3 Upper Bed 25 Resource Blocks

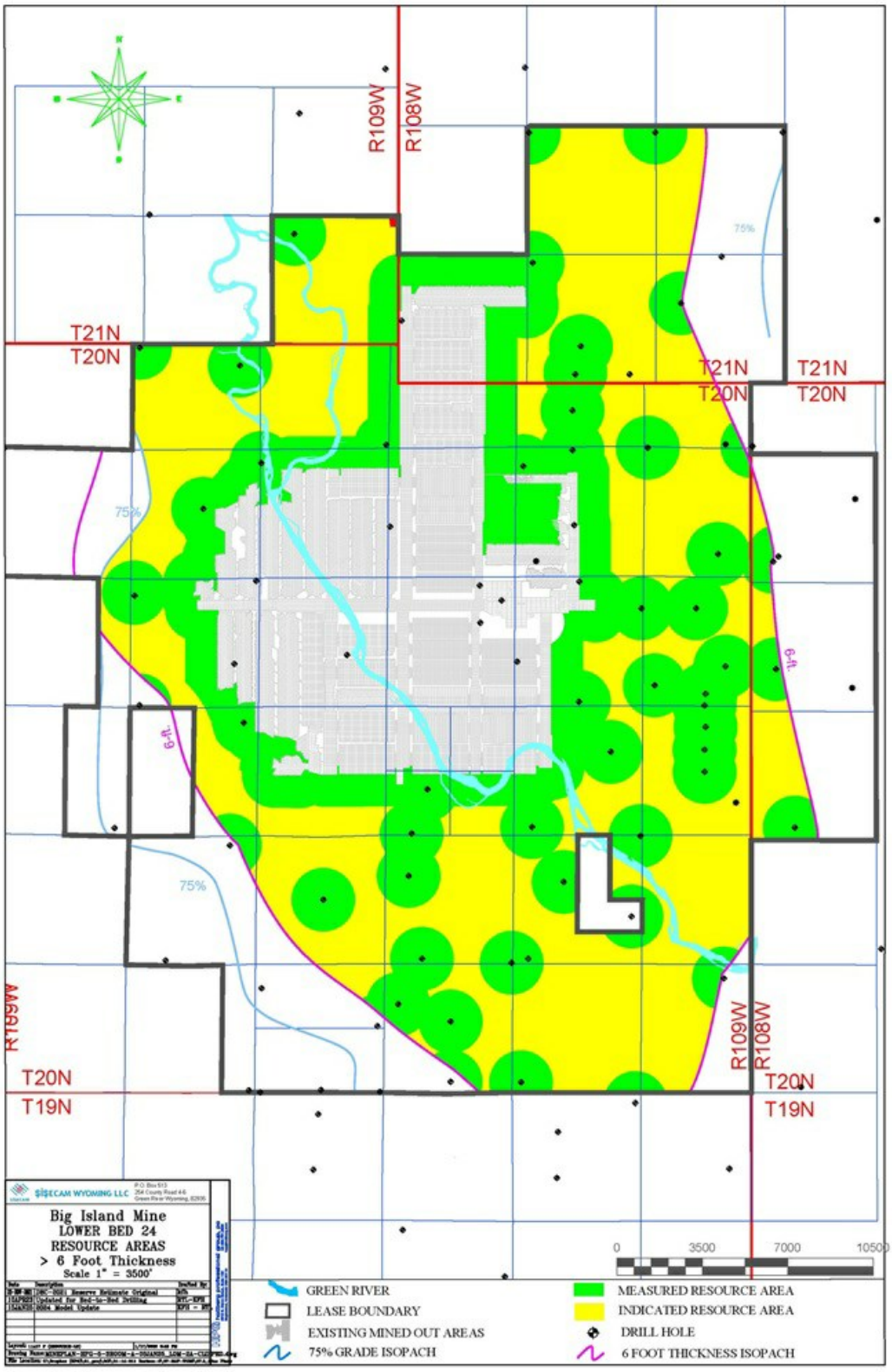


Figure 11.4 Lower Bed 24 Resource Blocks

12.0 MINERAL RESERVE ESTIMATE

No independent feasibility study was prepared in the determination of this reserve estimate. Instead HPG used the plus 60 years of mining and processing history at the Big Island to determine the mining, processing, and economic parameters used for this reserve estimate as described below.

This mineral reserve estimate contains “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, which are intended to be covered by the safe harbor created by such sections and other applicable laws. Please refer to the note regarding forward-looking information at the front of the Report. Investors are cautioned that the estimate is based on a high-level mine plan and certain assumptions which may differ from Şişecam Wyoming’s long-term outlook or actual financial results, including, but not limited to commodity prices, escalation assumptions and other technical inputs. Please be reminded that significant variation of soda ash prices, costs and other key assumptions may require modifications to mine plans, models, and prospects.

12.1 LIFE OF MINE PLAN

Şişecam like all mining companies, for lack of a better term “high grades” the mineral deposit where possible. Şişecam utilizes large highly productive continuous miners incorporating on-board roof bolters and a large on-board ventilation fan that require a minimum mining height of 9-feet. The required 9-feet mining height of this equipment limits how far mining may be extended to the edge of the ore body. Additionally, Şişecam’s processing facilities have limited ability to handle lower grade ore even if it is over a short period of a few hours. This plant limitation impacts what can be mined when disruptions in the ore body are encountered (Section 6.4.3). The lower grade material can be processed with minimal impact to recovery, but it must be processed at a slower rate which impacts total production. Şişecam has chosen to bypass this material and/or stop mining before the overall seam thickness and associated grade severely impacts the plant. Both of these choices are economic, made by Şişecam to minimize production costs. High grading is common and even standard practice for the mining industry. At some point in the future, Şişecam will have to make modifications, like other operators in the trona basin have done, to facilitate mining of these areas. This reserve estimate forecasts modification of the mining equipment and processing facilities in the future at a point when mining of the thicker trona (>9-feet) has been completed.

To account for this reality, HPG has developed a detailed Life-of-Mine (LOM) plan that in HPG’s opinion is a reasonable mining sequence for this deposit over its remaining 40 plus years assuming Şişecam choses to mine as much of the resource as possible. A two-stage mine plan has been developed. The first stage “high-grades” the deposit based upon the current mining equipment and processing plant limitations mining to the 9-foot isopach. This matches the practice employed over the last 20 years and should be viable for another 20 years. Based on this plan, thinner areas (less than 9-feet) or areas where disruptions have been encountered are not mined until later in the property life, assuming reasonable access is available at that time. This results in areas of the deposit that require a change in both mining equipment and processing facilities. The capital expense and changes to the operating costs for these changes have been accounted for in the economic analysis and a detailed mine plan has been developed showing potential access and mining of these areas.

The second stage mining is based upon smaller mining equipment and assumes changes to the dissolver sections of the processing plants. These changes should allow mining to the 7-foot isopach and processing areas of the trona resource where disruptions to the ore body have been and will be encountered as mining progresses towards the edge of the ore body. The 7-foot mining limit was selected based on current economics and practices at similar operations.

This type of two-stage mining is only possible when underground conditions allow access to the bypassed areas long after the first stage of mining was completed. This is true for the Big Island Mine where old mine workings developed 60 years ago are still open, accessible, and currently in use. Additionally, Şişecam has a history of accessing resource blocks from old mine workings. The UBSW slopes were developed in 2005 between old mine workings that had been mined in the 1970's. After 50 years of being mined these areas continue to be the primary access to the UB Southwest reserve blocks.

Carlson Software's Advance Mining module 2021™ was used to calculate tonnages and schedule mine development. Carlson's Advance Mining module applies the geologic bed thickness and grade information from the resource model to a user defined mining sequence with user defined equipment specifications.

Figure 12.1 and Figure 12.2 show a LOM plan for both the Upper and Lower Beds using current panel layouts, extraction rates and mining equipment based on the two-stage mining sequence.

While some effort was made to time the future mine plan over its 40-year plus predicted life, as measured from December 2024, this model should only be considered a generalization of the proposed timing and an illustration of how the deposit could be mined. This LOM incorporated the following assumptions:

- Production of 4.3 million ROM short tons per year starting in 2025;
- 9-foot plus material is mined first then the thinner 9-foot to 7-foot ore is mined;
- Mining limit cut-off of 7-feet and 85% minimum trona grade;
- Eastside of mine – Westside of mine production balance was maintained whenever possible. This exercise indicates that additional work is needed for long-term planning, as the equal east-west split breaks down in the mine plan. This results from the concentration on mining Upper Bed Ore instead of Lower Bed Ore. East west balance of ore into the crusher area is needed because of infrastructure limitations in the crusher area;
- Access to mining areas outside the 9-foot mining limit is provided by access through old workings, new development, or extensions of future mining panels;
- Out-of-seam dilution of 4-inches;
- Minimum entry mining height of 7-feet;
- Maximum mining height of 13.5-feet; and
- Mirror image two-seam panel layouts were used based on current two-seam mining designs.

To calculate the highest expected ROM feed grade optimally sized equipment was assumed and modeled as follows. Out of seam dilution was estimated at 4-inches of rock due to over mining the top or bottom. Additionally, a minimum entry height of 7-feet was assumed, allowing the equipment to cut to the 7-foot thickness isopach. Trona seam thickness varies, and it is predicted that the areas near the 7-foot isopach contain localized trona thickness areas less than 7-feet and even less than 6-feet in places. When seam thickness is less than 7-feet, out-of-seam rock is cut to maintain the 7-foot minimum mining height or entry height. The net out-of-seam dilution is the over/under cut of 4-inches plus any rock cut to maintain an entry height of seven feet.

A maximum equipment mining height of 13.5-feet was assumed which is the current limit of Şişecam's Joy 12HM26 roof bolters. Any trona ore thicker than 13.5-feet is assumed left in place, the historical mining practice using continuous miners at Şişecam. Based on the long history with continuous miners, this study did not consider larger equipment or bench mining to capture the in-place reserves thicker than 13.5-feet.

12.2 MINERAL RESERVE ESTIMATION

In determining the reserve parameters and assumptions HPG considered the following circumstances:

- Şişecam's 60-year long history and economics of mining the deposit and producing soda ash;
  - The 183.3 MST of trona ore produced from these two beds;
- The projected long life of the mine and resulting likely change in economics, mining, and processing methods over its projected 40-year mine life;
- Şişecam's current processing facilities capabilities and projected future changes to these facilities.
- The economics associated with Şişecam's current mining equipment and history of "high grading" the thickest portions of the deposit;
- Şişecam's current mining equipment limitations and required future changes to these systems; and
- HPG's knowledge operating and managing other trona and potash mines.

In determining whether the reserves meet these economic standards, HPG made certain assumptions regarding the remaining life of the Big Island Mine, including, among other things, that:

- The point of reference is run-of-mine ore delivered to the processing facilities;
- The cost of products sold per short ton will remain consistent with Şişecam Wyoming's cost of products sold for the five years ended December 31, 2024;
- The weighted average net sales per short ton FOB plant, $165/ton, based on USGS pricing and historical pricing provided by Şişecam;
- Şişecam Wyoming's mining costs will remain consistent with the five years ended December 31, 2024, until they begin two-seam mining, at which time mining costs for the two-seam mining tonnage could increase by as much as 30%;
- Şişecam Wyoming's processing costs will remain consistent with the five years ended December 31, 2024, and rise in 10-years to account for lower grade material;
- Şişecam Wyoming will maintain annual mining rate of approximately 4.3 million short tons of trona;
- Şişecam Wyoming will process soda ash with a 90% rate of recovery, without accounting for the deca rehydration process;
- The ore to ash ratio for the stated trona reserves is 1.835:1.0 (short tons of trona run-of-mine to short tons of soda ash);
- The run-of-mine ore estimate contains dilution from the mining process;
- Şişecam Wyoming will continue to conduct only conventional mining using the room and pillar method and a non-subsidence mine design;
- Şişecam Wyoming will, in approximately 10 years, make necessary modifications to the processing facilities to allow localized mining of 75% ore grade in areas where the floor seam or insoluble disruptions have moved up into the mining horizon causing mining to be halted early due to processing facility limitations;
- Şişecam Wyoming will, in approximately 20 years, make necessary equipment modifications to operate at a seam height of 7-feet, the current mining limit is 9-feet;
- Şişecam Wyoming has and will continue to have valid leases and license in place with respect to the reserves, and that these leases and license can be renewed for the life of the mine based on their extensive history of renewing leases and license;
- Şişecam Wyoming has and will continue to have the necessary permits to conduct mining operations with respect to the reserves; and
- Şişecam Wyoming will maintain the necessary tailings storage capacity to maintain tailings disposal between the mine and surface placement for the life-of-mine (LOM).

Table 12.1 through Table 12.4 summarizes the estimated recoverable trona from the Big Island Mine based on the LOM. Section 12.2.2 provides additional details and an explanation of the information contained in these tables.

Based on this analysis, Şişecam Wyoming can realistically expect to economically recover 217.7 MST of trona ore at an average grade of 85.6 percent from these reserves as of the end of December 2024. This is made up of 72.8 MST from Bed 25 and 145.0 MST from Bed 24. Proven recoverable tons are calculated as 109.2 MST, of which 39.5 MST remain in the Upper Bed 25 and 69.7 MST remain in the Lower Bed 24. Probable recoverable tons are calculated at 108.5 MST, of which 33.3 MST remain in the Upper Bed 25 and 75.2 MST remain in the Lower Bed 24. This is based on Şişecam continuing to mine using its existing mining methods and extraction rates for the remaining life of the currently controlled reserves. Estimated finished soda ash reserves are 118.0 MST. Numbers have been rounded; totals may not sum due to rounding.

Mineral reserves are reported on a 100% ownership basis. Şişecam Wyoming is owned 51% by Şişecam Chemicals LLC and 49% by NRP Trona LLC ("NRP Trona").

TABLE 12.1
RECOVERABLE TRONA RESERVES – BIG ISLAND MINE AND REFINERY
TRONA BEDS 24 AND 25 AS OF DECEMBER 31, 2024
WITHIN THE CONTIGUOUS LEASES AND LICENSE
Based on $165/TSA [1-5]

	Proven Mineral Reserves		Probable Mineral Reserves		Total Mineral Reserves	
Bed	Tons (Millions Tons)	Average Grade % Trona	Tons (Millions Tons)	Average Grade % Trona	Tons (Millions Tons)	Average Grade % Trona
Lower Bed 24	69.7	85.9	75.2	85.6	145.0	85.8
Upper Bed 25	39.5	85.6	33.3	84.8	72.8	85.3
Total	**109.2**	**85.8**	**108.5**	**85.3**	**217.7**	**85.6**

1) Numbers have been rounded; totals may not sum due to rounding.
2) Based on a 7-foot minimum thickness and an 85% minimum grade cut-off.
3) The point of reference is run-of-mine (ROM) ore delivered to the processing facilities including mining losses and dilution.
4) Mineral reserves are current as of December 31, 2024, using depletion and the definitions in SK1300.
5) Mineral reserves are reported on a 100% ownership basis. Şişecam Wyoming is owned by Şişecam Chemicals Wyoming LLC 51% and by NRP Trona LLC 49%.

TABLE 12.2
ESTIMATED RECOVERABLE TRONA RESERVES FOR BED 24 & 25
BY CATEGORY AND MINERAL OWNER
AS OF DECEMBER 31, 2024
Based on $165/TSA [1-5]

RESERVE CATEGORY AND LEASE	TRONA SEAM MINED (Mt)	OUT OF SEAM ROCK (Mt)	TOTAL ROM MINED (Mt)	AVERAGE IN-SEAM GRADE (% TRONA)	TOTAL TRONA (Mt)	TOTAL ROCK (In-seam + out-of-seam) (Mt)	TOTAL ROM Mined (Mt)	AVERAGE ROM FINAL GRADE (% TRONA)	TOTAL SODA ASH (Mt) (90% RECOVERY)
PROVEN (BED 24 & 25)									
Private Leases	53.9	1.8	55.7	88.9	47.9	7.7	55.7	85.9	30.3
US Leases	44.0	1.5	45.6	88.6	38.9	6.7	45.6	85.6	24.6
State Leases	7.8	0.2	8.0	89.2	7.0	1.1	8.0	86.7	4.4
PROVEN Total	105.7	3.5	109.2	88.8	93.8	15.5	109.2	85.8	59.4
PROBABLE (BED 24 & 25)									
Private Leases	53.2	1.9	55.1	88.5	47.1	8.0	55.1	85.3	29.8
US Leases	33.4	1.2	34.6	88.4	29.4	5.2	34.6	85.3	18.6
State Leases	18.2	0.6	18.8	88.8	16.2	2.6	18.8	85.9	10.2
PROBABLE Total	104.8	3.7	108.5	88.5	92.7	15.8	108.5	85.3	58.7
Grand Total	210.5	7.3	217.7	88.6	186.5	31.3	217.7	85.6	118.0

1) Numbers have been rounded; totals may not sum due to rounding.
2) Based on a 7-foot minimum thickness and an 85% minimum grade cut-off.
3) The point of reference is run-of-mine (ROM) ore delivered to the processing facilities including mining losses and dilution.
4) Mineral reserves are current as of December 31, 2024, using depletion and the definitions in SK1300.
5) Mineral reserves are reported on a 100% ownership basis. Şişecam Wyoming is owned by Şişecam Chemicals Wyoming LLC 51% and by NRP Trona LLC 49%.

TABLE 12.3
ESTIMATED RECOVERABLE TRONA RESERVES FOR BED 24 ONLY
BY CATEGORY AND MINERAL OWNER
AS OF DECEMBER 31, 2024
Based on $165/TSA [1-5]

RESERVE CATEGORY AND LEASE	TRONA SEAM MINED (Mt)	OUT OF SEAM ROCK (Mt)	TOTAL ROM MINED (Mt)	AVERAGE IN-SEAM GRADE (% TRONA)	TOTAL TRONA (Mt)	TOTAL ROCK (In-seam + out-of-seam) (Mt)	TOTAL ROM Mined (Mt)	AVERAGE ROM FINAL GRADE (% TRONA)	TOTAL SODA ASH (Mt) (90% RECOVERY)
PROVEN (BED 24)									
Private Leases	34.1	1.1	35.2	89.0	30.3	4.8	35.2	86.1	19.2
US Leases	27.4	1.0	28.4	88.5	24.2	4.2	28.4	85.5	15.3
State Leases	6.0	0.2	6.2	89.4	5.4	0.8	6.2	86.9	3.4
PROVEN Total	67.5	2.2	69.7	88.8	59.9	9.8	69.7	85.9	37.9
PROBABLE (BED 24)									
Private Leases	33.4	1.2	34.6	88.8	29.7	5.0	34.6	85.6	18.8
US Leases	23.2	0.9	24.0	88.6	20.5	3.5	24.0	85.4	13.0
State Leases	16.1	0.5	16.6	89.0	14.3	2.2	16.6	86.2	9.1
PROBABLE Total	72.6	2.6	75.2	88.8	64.5	10.7	75.2	85.6	40.8
Grand Total	140.2	4.8	145.0	88.8	124.4	20.5	145.0	85.8	78.8

1) Numbers have been rounded; totals may not sum due to rounding.
2) Based on a 7-foot minimum thickness and an 85% minimum grade cut-off.
3) The point of reference is run-of-mine (ROM) ore delivered to the processing facilities including mining losses and dilution.
4) Mineral reserves are current as of December 31, 2024, using depletion and the definitions in SK1300.
5) Mineral reserves are reported on a 100% ownership basis. Şişecam Wyoming is owned 51% by Şişecam Chemicals LLC and 49% by NRP Trona.

TABLE 12.4
ESTIMATED RECOVERABLE TRONA RESERVES FOR BED 25 ONLY
BY CATEGORY AND MINERAL OWNER
AS OF DECEMBER 31, 2024
Based on $165/TSA [1-5]

RESERVE CATEGORY AND LEASE	TRONA SEAM MINED (Mt)	OUT OF SEAM ROCK (Mt)	TOTAL ROM MINED (Mt)	AVERAGE IN-SEAM GRADE (% TRONA)	TOTAL TRONA (Mt)	TOTAL ROCK (In-seam + out-of-seam) (Mt)	TOTAL ROM Mined (Mt)	AVERAGE ROM FINAL GRADE (% TRONA)	TOTAL SODA ASH (Mt) (90% RECOVERY)
PROVEN (BED 25)									
Private Leases	19.8	0.7	20.5	88.7	17.6	2.9	20.5	85.6	11.1
US Leases	16.6	0.6	17.2	88.6	14.7	2.5	17.2	85.7	9.3
State Leases	1.8	0.1	1.8	88.1	1.5	0.3	1.8	85.1	1.0
PROVEN Total	38.2	1.3	39.5	88.6	33.8	5.7	39.5	85.6	21.4
PROBABLE (BED 25)									
Private Leases	19.8	0.7	20.5	88.0	17.4	3.1	20.5	84.9	11.0
US Leases	10.2	0.4	10.6	88.0	8.9	1.6	10.6	84.7	5.7
State Leases	2.1	0.1	2.2	87.7	1.9	0.3	2.2	84.1	1.2
PROBABLE Total	32.1	1.1	33.3	88.0	28.2	5.1	33.3	84.8	17.9
Grand Total	70.3	2.5	72.8	88.3	62.0	10.7	72.8	85.3	39.3

1) Numbers have been rounded; totals may not sum due to rounding.
2) Based on a 7-foot minimum thickness and an 85% minimum grade cut-off.
3) The point of reference is run-of-mine (ROM) ore delivered to the processing facilities including mining losses and dilution.
4) Mineral reserves are current as of December 31, 2024, using depletion and the definitions in SK1300.
5) Mineral reserves are reported on a 100% ownership basis. Şişecam Wyoming is owned by Şişecam Chemicals Wyoming LLC 51% and by NRP Trona LLC 49%.

12.2.1 Reserve Estimate Reconciliation

Recoverable trona reserves have decreased from 220.0 MST (December 31, 2021) to 217.7 MST (December 31, 2024). These changes were the net result of reductions from mining activities, additions due to lease acquisitions, reductions due to geologic model modifications, information from the 2021 to 2024 mining advance and barrier pillars protecting new shafts. Table 12.5 reports the details of these changes and are described below:

- Between December 31, 2021, and December 31, 202024, the Big Island Mine produced and hoisted 13.2 million tons to the surface;
- The addition of new leased acreage of 420 acres added approximately 9.8 million tons to the recoverable reserves;
- Examination and thickness measurements of the Upper Bed Southwest have been accounted for in this estimate and have resulted in an increase in the reserves driven mainly by thicker than predicted trona in the UB Southwest; and
- Based upon industry best practice and Ciner's drawing showing shaft barriers, a 1,000-foot barrier pillar protecting surface facilities and shafts, were accounted for surrounding Shaft 4 and proposed Shaft 5 locations.

TABLE 12.5
RECONCILIATION RESERVE ESTIMATES DEC-2021 TO DEC-2024
AS OF DECEMBER 31, 2024

	Estimated Resource (Mt)	Estimated Reserves or Mined (Mt)	Mineral Reserves (Mt)	Remaining Reserves (Mt)	Percent Change	Notes
Reserves as of December 31, 2021 (TRS)			**220.0**			
Mined 2022		(4.4)		215.6		Reported by Depleation
Mined 2023		(4.3)		211.3		Reported by Depleation
Mined 2024		(4.5)		206.8		
Tonnage from Added Leased Acreage	16.4	9.8		216.7		
Estimated Geologic Model Adjustments		1.0		**217.7**		
Total Mined 2021-2024		13.2				
Reserves as of December 31, 2024 (TRS)			**217.7**		1.03%	

Table 12.6 through Table 12.8 illustrate the change in estimated reserves between 2021 and 2024 by mining bed and lease holder.

TABLE 12.6
CHANGE IN ESTIMATED TRONA RESERVES 2021-2024 FOR BEDS 24 &25
BY CATEGORY AND MINERAL OWNER AS OF DECEMBER 31, 2024
Based on $165/TSA 1-5

RESERVE CATEGORY AND LEASE	TRONA SEAM MINED (TONS)	OUT OF SEAM ROCK (TONS)	TOTAL ROM MINED (TONS)	AVERAGE IN-SEAM GRADE (% TRONA)	TOTAL TRONA (TONS)	TOTAL ROCK (In-seam + out-of-seam) (TONS)	TOTAL ROM Mined (TONS)	AVERAGE ROM FINAL GRADE (% TRONA)	TOTAL SODA ASH TONS (90% RECOVERY)
PROVEN (BED 24 & 25)									
Private Leases	6.8	0.2	7.1	0.0	6.3	0.8	7.1	0.0	4.0
US Leases	4.5	0.2	4.7	0.0	4.1	0.6	4.7	0.0	2.6
State Leases	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0
PROVEN Total	11.4	0.5	11.8	0.0	10.5	1.4	11.8	0.0	6.6
PROBABLE (BED 24 & 25)									
Private Leases	-4.1	-0.2	-4.3	0.0	-3.7	-0.6	-4.3	0.0	-2.4
US Leases	-9.6	-0.3	-9.9	0.0	-8.5	-1.4	-9.9	0.0	-5.4
State Leases	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1
PROBABLE Total	-13.6	-0.5	-14.1	0.0	-12.2	-1.9	-14.1	0.0	-7.7
Grand Total	-2.2	0.0	-2.3	0.0	-1.7	-0.6	-2.3	0.0	-1.1

1) Numbers have been rounded; totals may not sum due to rounding.
2) Based on a 7-foot minimum thickness and an 85% minimum grade cut-off.
3) The point of reference is run-of-mine (ROM) ore delivered to the processing facilities including mining losses and dilution.
4) Mineral reserves are current as of December 31, 2024, using depletion and the definitions in SK1300.
5) Mineral reserves are reported on a 100% ownership basis. Şişecam Wyoming is owned by Şişecam Chemicals Wyoming LLC 51% and by NRP Trona LLC 49%.

TABLE 12.7
CHANGE IN ESTIMATED TRONA RESERVES 2021-2024 FOR BEDS 24
BY CATEGORY AND MINERAL OWNER AS OF DECEMBER 31, 2024
Based on $165/TSA [1-5]

RESERVE CATEGORY AND LEASE	TRONA SEAM MINED (TONS)	OUT OF SEAM ROCK (TONS)	TOTAL ROM MINED (TONS)	AVERAGE IN-SEAM GRADE (% TRONA)	TOTAL TRONA (TONS)	TOTAL ROCK (In-seam + out-of-seam) (TONS)	TOTAL ROM Mined (TONS)	AVERAGE ROM FINAL GRADE (% TRONA)	TOTAL SODA ASH TONS (90% RECOVERY)
PROVEN (BED 24)									
Private Leases	2.8	0.1	2.9	0.0	2.5	0.4	2.9	0.0	1.6
US Leases	2.6	0.2	2.8	0.0	2.2	0.6	2.8	0.0	1.4
State Leases	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PROVEN Total	5.4	0.3	5.7	0.0	4.8	1.0	5.7	0.0	3.0
PROBABLE (BED 24)									
Private Leases	-5.0	-0.2	-5.2	0.0	-4.5	-0.7	-5.2	0.0	-2.8
US Leases	-2.8	-0.1	-2.8	0.0	-2.5	-0.3	-2.8	0.0	-1.6
State Leases	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PROBABLE Total	-7.8	-0.3	-8.0	0.0	-7.0	-1.1	-8.0	0.0	-4.4
Grand Total	-2.3	0.0	-2.3	0.0	-2.2	-0.1	-2.3	0.0	-1.4

1) Numbers have been rounded; totals may not sum due to rounding.
2) Based on a 7-foot minimum thickness and an 85% minimum grade cut-off.
3) The point of reference is run-of-mine (ROM) ore delivered to the processing facilities including mining losses and dilution.
4) Mineral reserves are current as of December 31, 2024, using depletion and the definitions in SK1300.
5) Mineral reserves are reported on a 100% ownership basis. Şişecam Wyoming is owned by Şişecam Chemicals Wyoming LLC 51% and by NRP Trona LLC 49%.

TABLE 12.8
CHANGE IN ESTIMATED TRONA RESERVES 2021-2024 FOR BEDS 25
BY CATEGORY AND MINERAL OWNER AS OF DECEMBER 31, 2024
Based on $165/TSA [1-5]

RESERVE CATEGORY AND LEASE	TRONA SEAM MINED (TONS)	OUT OF SEAM ROCK (TONS)	TOTAL ROM MINED (TONS)	AVERAGE IN-SEAM GRADE (% TRONA)	TOTAL TRONA (TONS)	TOTAL ROCK (In-seam + out-of-seam) (TONS)	TOTAL ROM Mined (TONS)	AVERAGE ROM FINAL GRADE (% TRONA)	TOTAL SODA ASH TONS (90% RECOVERY)
PROVEN (BED 25)									
Private Leases	4.0	0.1	4.1	0.0	3.8	0.4	4.1	0.0	2.4
US Leases	1.9	0.0	1.9	0.0	1.9	0.0	1.9	0.0	1.2
State Leases	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
PROVEN Total	5.9	0.2	6.1	0.0	5.7	0.4	6.1	0.0	3.6
PROBABLE (BED 25)									
Private Leases	0.9	0.0	0.9	0.0	0.7	0.1	0.9	0.0	0.5
US Leases	-6.8	-0.2	-7.1	0.0	-6.0	-1.0	-7.1	0.0	-3.8
State Leases	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1
PROBABLE Total	-5.8	-0.2	-6.1	0.0	-5.2	-0.9	-6.1	0.0	-3.3
Grand Total	0.1	-0.1	0.0	0.0	0.5	-0.5	0.0	0.0	0.3

1) Numbers have been rounded; totals may not sum due to rounding.
2) Based on a 7-foot minimum thickness and an 85% minimum grade cut-off.
3) The point of reference is run-of-mine (ROM) ore delivered to the processing facilities including mining losses and dilution.
4) Mineral reserves are current as of December 31, 2024, using depletion and the definitions in SK1300.
5) Mineral reserves are reported on a 100% ownership basis. Şişecam Wyoming is owned by Şişecam Chemicals Wyoming LLC 51% and by NRP Trona LLC 49%.

12.2.2 Recoverable Trona Table Description

The following descriptions were used in calculating Table 12.2 through Table 12.4 and Table 12.6 through Table 12.8:

Reserve Category and Lease or License –

Reported reserves are broken down into reserve classification, Proven or Probable, and divided by lessor or licensor.

Trona Seam Mined (Short Tons) –

Summarizes the total trona tons mined for each category. Calculated by multiplying the subject area times the estimated bed thickness. The trona seam is made up of pure trona interbedded with other soluble and insoluble minerals.

Out of Seam Rock (Short Tons) –

The out-of-seam rock is a calculation of the tons produced from the inaccuracies of the mining process. The continuous mining machine is not capable of perfectly cutting the trona ore seam. For the purposes of this study 4-inches of out-of-seam, material has been included in the mined material.

Total ROM Mined (Short Tons) –

The total ROM material mined is calculated as follows:

Total ROM Mined = Trona Seam Mined + Out of Seam Rock.

These are the tons that the refinery will process and are the reported recoverable reserves at a given ROM grade.

Average In-Seam Grade (% Trona) –

The average in-seam grade summarizes the average trona grade for the seam over the reported category based upon the geologic model.

Total Trona (Short Tons) –

Total Trona reports the short tons of pure trona for the given category and is calculated as follows:

Total Trona = Trona Seam Mined x Average In-Seam Grade

This is the tonnage of trona ore available for processing into soda ash.

Total Rock (In-seam + Out-of-Seam) (Short Tons) –

Total Rock, in-seam plus out-of-seam reports the total insoluble material in the ROM ore for the given category and is calculated as follows:

Total Rock Tons = Out of Seam Rock Tons + Insoluble Tons within the mined bed

or

Total Rock Tons = Out of Seam Rock Tons + (Trona Seam Mined Tons – Total Trona Mined Tons)

Total ROM Mined (Short Tons) –

This column is a back check to ensure the calculations are accurate and equals:

Total ROM Mined = Total Trona + Total Rock.

Average ROM Final Grade (% Trona) –

Average ROM final grade estimates the final grade, in percent trona, of the material sent to the refinery and is calculated as follows:

Average ROM Final Grade = 1 – (Total Rock / Total ROM Mined /100)

Total Soda Ash Tons (90% Recovery) –

Total Soda Ash Tons reports the estimated soda ash that can be produced over the reported category and is calculated as follows:

*Total Soda Ash Tons = Total Trona Tons / 1.4218 * 0.90.*

The conversion factor for trona to soda ash of 1.4218 is explained in Section 10.1.

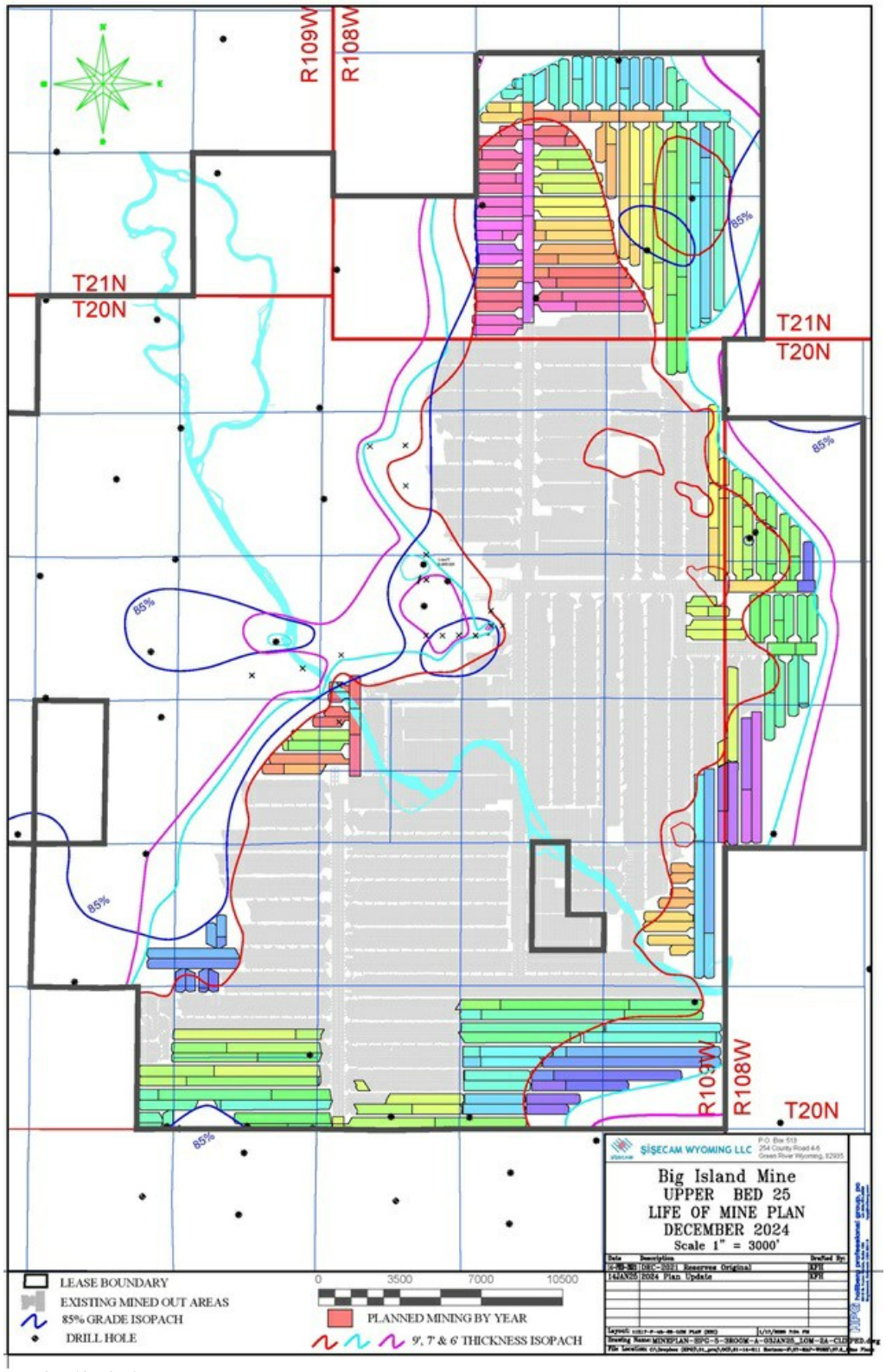


Figure 12.1 Upper Bed 25 Life of Mine Plan

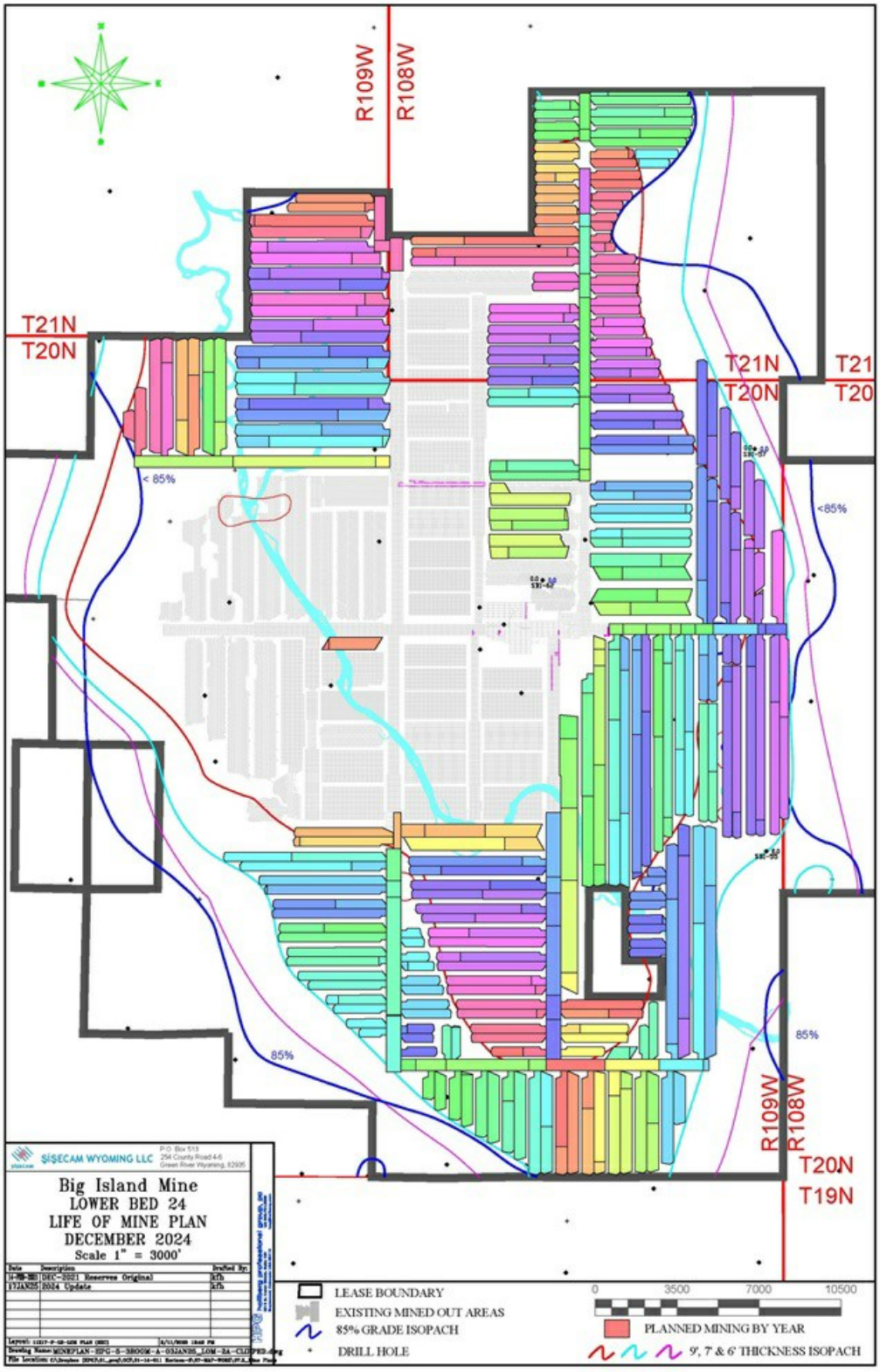


Figure 12.2 Lower Bed 24 Life of Mine Plan

12.3 UNCERTAINTIES (FACTORS) THAT MAY AFFECT THE MINERAL RESERVE ESTIMATE

Areas of uncertainty that may materially impact the mineral reserve estimates include:

- Changes to long-term soda ash price and exchange rate assumptions;
- Changes in local interpretations of trona seam thickness and grade such as sedimentary structures described in Section 6.4.3;
- Changes to geological and grade shape, and geological and grade continuity assumptions;
- Changes to soda ash recovery assumptions;
- Changes to the forecast dilution and mining recovery assumptions;
- Changes to the cut-off values applied to the estimates;
- Variations in geotechnical (including seismicity), hydrogeological and mining method assumptions; and
- Changes to environmental, permitting, and social license assumptions.

12.4 SECONDARY RECOVERY AND HIGH EXTRACTION MINING

Due to non-subsidence limitations, this reserve estimate does not include any trona resources that could be recovered by solution mining or secondary recovery. Şişecam Wyoming has limited ability to implement high extraction mining or secondary solution mining due to the Green River crossing the property.

12.4.1 Non-Subsidence Areas

Non-subsidence areas for the Big Island Mine include but are not limited to, the Green River, Şişecam Wyoming Refining Facility, tailings complex, railroad spurs, gas pipelines, highways, and surface access for return or injection systems.

While subsidence of rivers, roads, rail, and pipelines has been successfully done in the Trona Basin, the degree of subsidence and the features subsided dictate what mitigation efforts are necessary.

Due to its low drainage gradient and the proximity of Seedskadee National Wildlife Area, the Green River flood plain should be considered a non-subsidence area. Unfortunately, LB West seismic activity in combination with water inflow has resulted in subsidence next to a small section of the Green River. The DEQ and LQD have been made aware of this situation, and they have not voiced any concerns at this time. Şişecam has notified other relevant regulatory agencies and interested parties. The area is being monitored closely for any surface changes or impact to the underground mine. Further information on this topic is available in Section 13.2.1.

The Şişecam Wyoming Refining Facility, along with the mine shafts, are also considered non-subsidence areas. The other overlying features, roads, rails, and pipelines can be subsided if the proper mitigating work is complete.

13.0 MINING METHOD

Mining extraction at the Big Island Mine is designed to avoid any surface subsidence due to its proximity to the Green River and multiple natural gas pipelines.

Conventional mining equipment (drill and blast) was used at the Big Island Mine until the mid-1980's, when continuous miners fully replaced that method of ore production. A total of 59.2 MST was recovered conventionally at a 42% to 45% areal extraction rate. Undercutters were used to 'top-cut' the trona seam prior to drilling and blasting. This equipment limited the mining height and tended to leave one to two feet of roof trona, resulting in a volumetric extraction of 35% to 40%. Including barrier pillars between panels, historic conventional extraction averaged in the low 30% range.

The change to continuous miner (CM) panel layouts increased entry widths from 22-feet to 30-feet, and areal extraction increased to an average of 56% with some CM panel extraction rates as high as 68%. Volumetric extraction also increased, as the continuous miners could mine up to 13.5-feet high. It is common for the continuous miners to mine the full seam height leaving little, if any, top or bottom trona. Given full seam height extraction, and with barrier pillars, the historic continuous miner volumetric extraction ranges between 45% and 55%.

The current CM fleet is made up of seven Joy 12HM26 drum miners with integral roof bolting and ventilation fans. These are highly productive machines due to their ability to mine and roof bolt simultaneously. The height of the roof bolters and fan limit the current minimum mining height to 9-feet. When thinner seam areas are encountered, floor or roof rock must be mined for clearance. This out-of-seam material adversely affects the refining process. To maintain feed grade, the current minimum mining limit is 9-feet. For this study, future mining of seam areas below 9-feet is assumed to utilize smaller continuous miners.

For the purpose of this estimate, HPG has assumed Şişecam Wyoming will continue to use this mining method and equipment with some changes to mining height for the LOM.

13.1 TWO SEAM MINING

Portions of the remaining Bed 24 trona are located under previously mined areas in Bed 25. These areas are where 'two-seam mining' is required. Two-seam mining extracts the mineral from both beds. Due to the thin interburden (25 to 40-feet) between Bed 24 and 25 and wide entries mined, mining induced stresses are higher in these areas of two-seam mining, Şişecam Wyoming has conducted significant computer modeling of the rock mechanics and predicted mine entry stability surrounding two-seam mining. Additionally, three test panels and one production panel have been mined in areas where lower extraction conventional mining techniques were employed. These panels were mined successfully and remain accessible and stable for many years after mining.

Since the 2021 TRS, Şişecam has mined over 2.7 million tons from the two-seam area completing two full CM panels, extended the LB North Mains and are developing two additional CM panels. Examination of the area indicated favorable mining conditions consistent with predicted results. These initial panels have been instrumented and will be analyzed and monitored as adjacent panels are developed.

Based on this progress it will be an additional two to four years before Şişecam is able to fully demonstrate the viability of two-seam mining with the current mining equipment. To account for this risk, higher mining costs have been used in the economic analysis and the affect is discussed in Section 19.0. Given the work completed, the existing test panels, and the cost structure at Şişecam Wyoming, it is reasonable to conclude that these areas can be economically mined and therefore are considered reserves in this study.

Approximately 115 MST of Bed 24 recoverable reserves are located in projected two-seam mining areas.

13.2 RESERVE ACCESS

The Big Island Mine is regulated by the Mine Safety and Health Administration ("MSHA") as a metal and non-metal mine. For the purposes of this analysis, it is assumed that MSHA will continue to allow Şişecam Wyoming to mine for the LOM under the metal and non-metal rules.

Four (4) existing surface to ore bed shafts are used to access the trona reserves of Beds 24 and 25. All four shafts terminate below Bed 24, are fully concrete lined, and none have stations in Bed 25. Shaft #1 and Shaft #2 are the original shafts and were installed in 1961. Shaft #1 contains a service hoist for man and material access, is 16-feet in diameter and is used as an intake airway. Shaft #2 is 20-feet in diameter, has a concrete divider wall, and one-half is used as an intake airway while the other half contains a production hoist with 10-ton skips. Shaft #2 has newly installed direct fire natural gas heaters for the intake air. Shaft #3 was constructed in 1981, is 20-feet in diameter, and has a divider wall with half the shaft used as in intake airway heated by steam. The other half contains a production hoist with 10-tons skips. Hoisting capacity is approximately 1,000 tons per hour with the existing systems. The recently completed, 20-foot diameter, Shaft #4 is the main return airway with two 12-ft diameter ventilation fans. The other three shafts provide air intake. Shaft #4 does not have a conveyance but does have a repair deck that can be lifted by a crane.

For the purpose of this estimate, HPG has assumed Şişecam Wyoming will maintain the shafts and hoists for the LOM.

The deposit is accessed from the shafts through existing and new mine entries. Ore transport from the mining face is by belt conveyors to the hoists at the shaft locations. For the purposes of this study, HPG assumed Şişecam Wyoming will continue to advance and maintain all infrastructure needed to access the ore for the LOM.

The Big Island mine is considered a gassy mine because it produces methane gas. The mine is currently ventilated by two newly installed Spendrup 12-ft diameter ventilation fans. Only one fan is needed for operations with the second a full operational spare. Ventilation is approximately 725,000 cubic feet per minute (CFM) of air. Each fan can be upgraded from 1,500 hp to 3,000 hp which would allow airflow to be increased to 1,300,000 CFM which is considered more than adequate for the long-term needs of the mine.

In general, long-term mine roof conditions are excellent. Most of the old workings can still be accessed. Panels mined in the 1960s are still accessible.

13.2.1 Inaccessible Areas

Areas that cannot be accessed are the TRM panels and the LB West Mains and Panel areas.

TRM panels are not accessible, they have been filled with the paste tailings from the refining process and are in the center of the deposit near the shafts.

The LB West Mains area west of X-Cut 223W are inaccessible due to roof falls across the mains that occurred in 2019.

This area was mined in the late 1990s and early 2000s with the last panel mined in 2005. During mining the panels to the north and south of the LB Mains encountered multiple roof falls and required secondary roof support. Roof falls in these panels have continued and increased in magnitude. On July 1st and 2nd 2016, two seismic events of magnitude 3.4 and 3.2 occurred with an epicenter in the vicinity of the Granger solution mine approximately 9-miles to the West of the Big Island Mine (BIM). Concurrent with these events the BIM experienced an air blast along the West Mains past X-Cut 152W blowing down 26 stoppings along with an increase in methane emissions. The USGS did not record any seismic activity in the vicinity of the BIM at this time. The likely cause of the air blast was roof falls in the panels adjacent to these mains. The location of these falls is not known due to lack of access in these old panels. Examination of the mains during this time indicated that they were stable. Additional roof falls likely occurred in these panels as indicated by methane spikes in November 2016, December 2016, June 2017, and February 2018. None of these methane spikes were associated with damage to any ventilation structures.

In February 2017, the area was examined. Ground conditions along the West Mains were considered to be deteriorating, but stable and no water was observed. In early 2018 examinations of the West Mains discovered ponding water covering most of the Lower Bed West workings below the 5310 MSL elevation. Figure 13.1 shows the extent of the flooded area. Chemical analysis of the water indicated that the source was not the Tailing Return to the mine water. Further analysis using radio isotopes indicated the age of the water as pre-nuclear age or fossil water older than 1952. The hydrologist concluded that the source is likely a sandstone unit 50 to 75-feet above Bed 25 that is a known low permeability aquifer and not directly the result of leakage from the Green River.

On February 22, 2019, the USGS recorded multiple seismic events with the epicenters in the mining panels north and south of the LB West mains west of X-Cut 219W. These events resulted in additional damage to ventilation structures in the area as well as a significant spike in methane emissions high enough to warrant shutting down the mine for six days until methane outgassing decreased to safe levels. Standing supports were placed in the LB West Mains at X-Cut 221W to create a break line if the mains became unstable. Monitoring of the area continued, and the water continued to subside. On April 5, 2019, the LB West Mains west of X-Cut 223W fell and caved tight between the floor and roof across the entire set of main entries.

Ground conditions in this area were considered problematic so Şişecam has established a new long-term pumping station located in the Lower Bed Southwest #2 Butts-X-Cut 60 S. Water from the area is pumped into the adjacent TRM sumps and then pumped out of the mine. Current pumping capacity at this location is approximately 200 gpm with the current long term average flow of approximately 80 gpm and 150 million gallons have been pumped to the surface tailings ponds since October of 2020.

Access to remaining LB West reserves located west of the existing mine workings using the LB West Mains is no longer possible without extraordinary effort. This reserve area could be accessed from the LB North Butts by driving mains to the west as shown in the proposed LOM plan accessing the LB Northwest reserve block. Panels could be developed from this new set of mains to the south to access these reserves. There are several risks associated with this area:

- These new panels would be down dip, lower in elevation, than the flooded areas. Mining down dip from flooded workings increases risk;
- The ore in this area has a modulus of elasticity that is half other areas of the BIM. Mining conditions similar to historic panels are likely and will require additional roof support; and
- The historic mined area continues to have roof falls as evidenced by 2019 seismic activity.

HPG does not consider this area to be minable and has removed it from the recoverable trona estimate due to the risks associated with seismicity, water inflow and soft ore. Removal of this area decreased recoverable trona by approximately 10.2 MST.

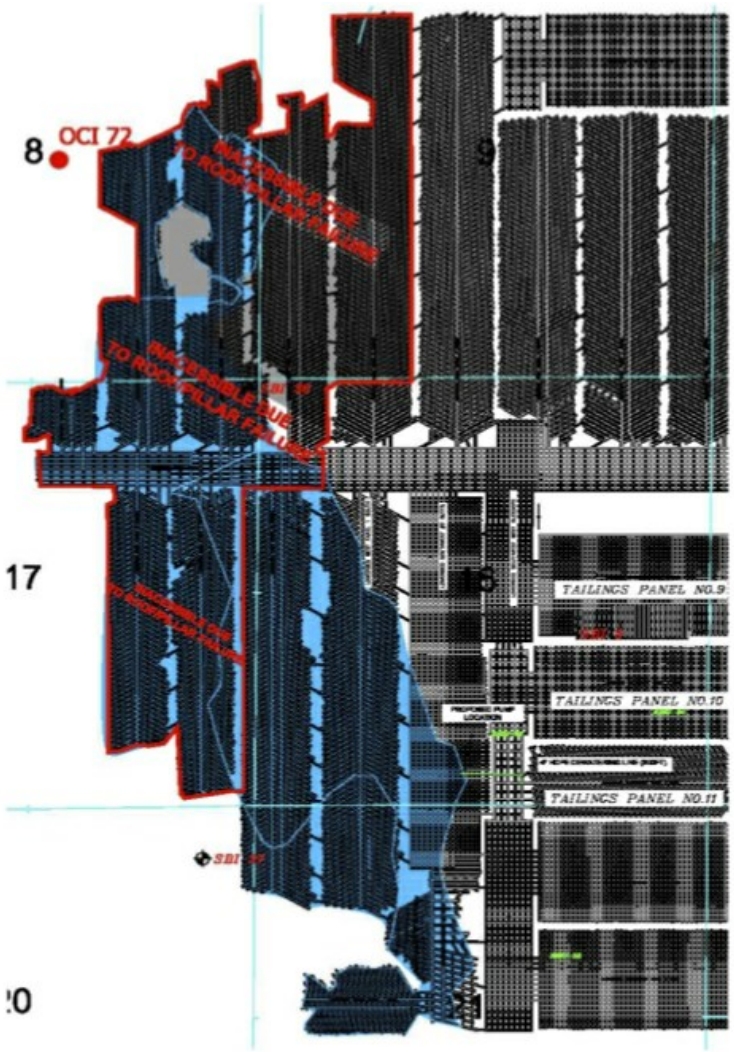


Figure 13.1 Lower Bed 24 Flooded Area
Source: 20220125 Subsidence Potential of Lower Bed West Section at Big Island Mine - RMC Final with Appendix.pdf (after Straub, 2021)

13.2.2 Mining Limit

The assumed 7-foot mining limit and 85% grade limit were selected based on the mining limit that has been successfully employed by the other basin trona mines.

Given the current minimum mining height limit of 9-feet and a reserve limit of 7-feet, there are areas outside the existing mining that are considered reserves but have not been mined based on these limits. In areas where the existing mining limit of 9-feet did not reach to the 7-foot isopach, it has been assumed that future access to these reserves would be through old workings or from newly driven development entries (see Life of Mine Plan Figure 12.1, Figure 12.2 and Section 12.1). For this study, these reserve remnants have been evaluated based on size and access to decide future extraction. Where the remnant was deemed too small or access too expensive, the remnant was excluded from the reserve estimate. As future mining continues, with the current large mining equipment, some loss of portions of the edge of the ore bodies will occur, especially when long production panels are developed. The length of recent production panels, greater than 10,000-feet long, likely precludes rehabilitation in the future to access reserves between the 9-foot and 7-foot isopachs. This estimate assumes that access to the UB Southeast Reserve block will be bypassed in this way, Figure 12.1. For the purposes of this study, these areas were considered on a case-by-case basis assuming Şişecam's typical mining methods and current cost structure.

A two-stage mine plan has been developed. The first stage "high-grades" the deposit based upon the current mining equipment and processing plant limitations mining to the 9-foot isopach. The second stage mining is based upon smaller mining equipment and assumes changes to the dissolver sections of the processing plants. The second stage mines the material between the 9-foot and 7-foot isopachs.

The mining limit, ore thickness and grade, is an economic one. Mining thinner material will be less productive and costlier. Mining costs of reserves between 9-feet and 7-feet thick could increase by 50% to 75%, making the economics of these reserves sensitive to variations in soda ash price.

14.0 PROCESSING AND RECOVERY METHODS

14.1 INTRODUCTION

Şişecam utilizes the monohydrate process to convert raw trona into soda ash in five (5) processing plants. The plants are well established and have a long production history which is illustrated in Table 14.1 below. Unit 6 is an integrated stand-alone plant constructed in 1998, and Unit 7 is a large calcining dissolver constructed in 2006 to feed liquor to Units 3 through 5. All the plants have had significant upgrades over the years to both improve recovery, energy efficiency, and increase soda ash production.

The primary feedstock to these plants is raw mined trona with a minor secondary feed from liquor produced from mining the DECA crystals, sodium carbonate decahydrate, from the evaporation ponds of the tailing disposal areas. The DECA crystals are mined using tracked backhoes, dewatered, and dissolved into liquor for feed into the dissolver circuit. The majority of the available DECA crystals have been mined from the pond systems. For the purposes of this estimate feed from DECA crystals has not been considered because the Pond 1 DECA has been mined out and it will take several years for DECA thick enough to mine to crystalize from the decant liquor.

For operational flexibility and to improve efficiencies there are multiple lines, ties, between the plants to optimize the liquor produced by the dissolver sections. Excess liquor from Unit 6 can be shared with Units 3 through 5 and similarly excess liquor from Unit 7 can be shared with Unit 6.

14.2 MONOHYDRATE PROCESS

Figure 14.2 is a simplified process flow diagram of the monohydrate (Mono) process operated at Şişecam. The Mono process starts with screening and crushing the trona feed to minus 3/8” which is then calcined in a gas fired rotary kiln at approximately 150-200 degrees Celsius converting the raw trona into crude soda ash and insoluble material (shale and marlstones). The conversion of trona (sodium sesquicarbonate) to sodium carbonate improves the dissolution in water so that the insoluble material can be removed by gravity separation using spiral classifiers and counter current thickeners. The overflow liquor from the thickeners is put through multiple stages of filtration to remove insoluble material.

The sodium carbonate is recrystallized from the filtered liquor in forced circulation evaporators heated by mechanical vapor recompression (MVRs). The crystalized dense soda ash is dewatered using pusher centrifuges and dried in gas fired rotary driers, screened, and sent to storage for shipping by truck or rail.

The underflow from the classifiers and thickeners is sent to the TRM paste plant where it is ground and dewatered using deep cone thickeners and pumped as a paste via positive displacement pumps underground into the old mine workings or on the surface into the tailings pond system. Şişecam is in the process of converting to a coarse tails output.

14.3 SODA ASH PROCESSING FACILITIES

Şişecam currently has two ore calcining and dissolving units with four soda ash processing plants. The first two processing plants, Unit 1 and Unit 2 built in 1962 used triple effect evaporators, were taken out of service after being replaced by the integrated Unit 6 plant. Unit 7 calciner and dissolving unit was constructed to replace the front ends for Units 3, 4, and 5. The dissolver units liquor output is interconnected to the multiple evaporator units. Figure 14.1 illustrates the relationships between the units and Figure 14.2 shows a simplified process flow diagram from the mine to the product silos. The details of the existing processing facilities are described in more detail below.

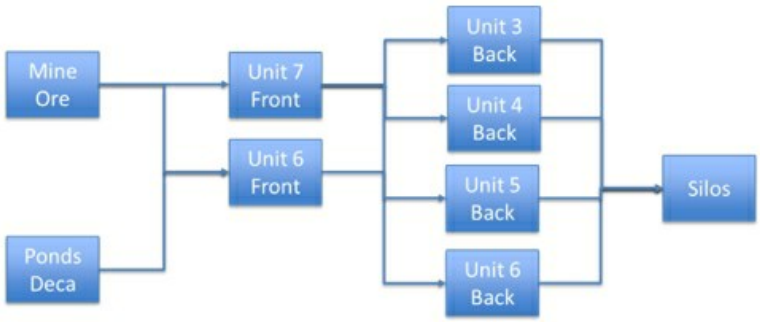


Figure 14.1 Şişecam Processing Facilities

TABLE 14.1
ŞIŞECAM HISTORICAL PRODUCTION

	Short Tons	
	Trona Ore	**Soda Ash**
2016	4,050,396	2,654,965
2017	4,001,325	2,625,612
2018	4,018,329	2,569,145
2019	4,157,009	2,712,187
2020	3,653,830	2,236,850
2021	4,276,837	2,682,203
2022	4,373,724	2,660,172
2023	4,371,284	2,572,441
2024	4,467,168	2,475,813

14.3.1 Ore Crushers

Mined ore is crushed in two separate areas. The first is a crusher and screening building upgraded in 1980 that supplies crushed ore to Unit 7 that is then fed to Units 3 through 5. This area has two closed loop crushers. The second is a dedicated single closed loop crusher that was built with Unit 6 and only supplies ore to that unit.

14.3.2 Unit 7

Unit 7 was constructed in 2006 as an alternative energy project to update the dissolver sections of Units 3 through 5. Unit 7 consists of a large rotary calciner, Verti-mill grinder, and classifiers that supply liquor to Units 3 through 5. Originally the rotary calciner could be dual fired by coal or natural gas. The coal burner had low NOx emissions and was BACT at the time of construction. The unit was converted to only natural gas firing in November of 2010 due to economics and ability to increase production on gas.

14.3.3 Unit 3 and 4

Units 3 and 4 were constructed in 1967 and 1972, respectively. Both originally used triple effect evaporators with steam from gas fired boilers in the powerhouse and had their own dedicated calciners and dissolvers. In the 1980's Rhone-Poulenc converted the evaporators to MVRs. Unit 3 has two MVRs for the three evaporator bodies. Unit 4 uses two MVRs in series to drive the first two evaporator bodies (System 1) and two smaller MVR's to drive the third evaporator body (System 2). In 2006 Unit 7 replaced the calciners and dissolver sections. Unit 3 has the ability to produce 450 KTPY of soda ash and Unit 4 can produce 750 KTPY.

14.3.4 Unit 5

Rhone-Poulenc expanded soda ash production between 1977 and 1980 by adding an additional mine production Shaft #3, upgrading the crushing facilities, automating the surface ore stockpile, and constructing the fifth soda ash plant. Unit 5 has one large evaporator body with two heat exchangers driven by one large MVR compressor. Unit 5 is capable of producing 500 KTPY. Unit 5's calciner and dissolver sections were replaced by Unit 7 in 2006.

14.3.5 Unit 6

OCI Chemical expanded soda production in 1998 with the construction of Unit 6, a standalone integrated plant with crushing, calcining, dissolving, filtering, crystalizing, thickeners, and tailings pumps. Current annual production from Unit 6 is nominally 1,000,000 TPY. Unit 6 consists of two large MVR evaporator bodies with two heat exchanges for each.

Unit 6 Tailing TRM is made up of a dedicated rod mill crusher, deep cone thickener, high pressure positive displacement pumps and a dedicated borehole to the mine where a pipeline transports the paste to the underground TRM storage panels. Unit 6 TRM will be converted to a coarse tails output.

14.3.6 Tailings Return to the Mine Plant

The TRM Plant was constructed concurrently with the Unit 6 expansion. Commissioned in 1995, TRM processes the tailings from Units 3 through 5 and produces a thickened paste that is pumped into the old mine workings or to the surface tailings pond facility, where it is dewatered for permanent storage. Originally TRM had its own rod mill grinder and wet screens to produce paste. The Unit 7 Verti-mill has replaced that grinder and TRM now only consists of the deep cone thickener, high-pressure positive displacement pumps, a borehole into the mine and high-pressure piping to the underground storage panels or to the surface tailings pond facility. Şişecam is in the process of converting to a coarse tailings system. More information on tailings disposal is available in Section 17.4.

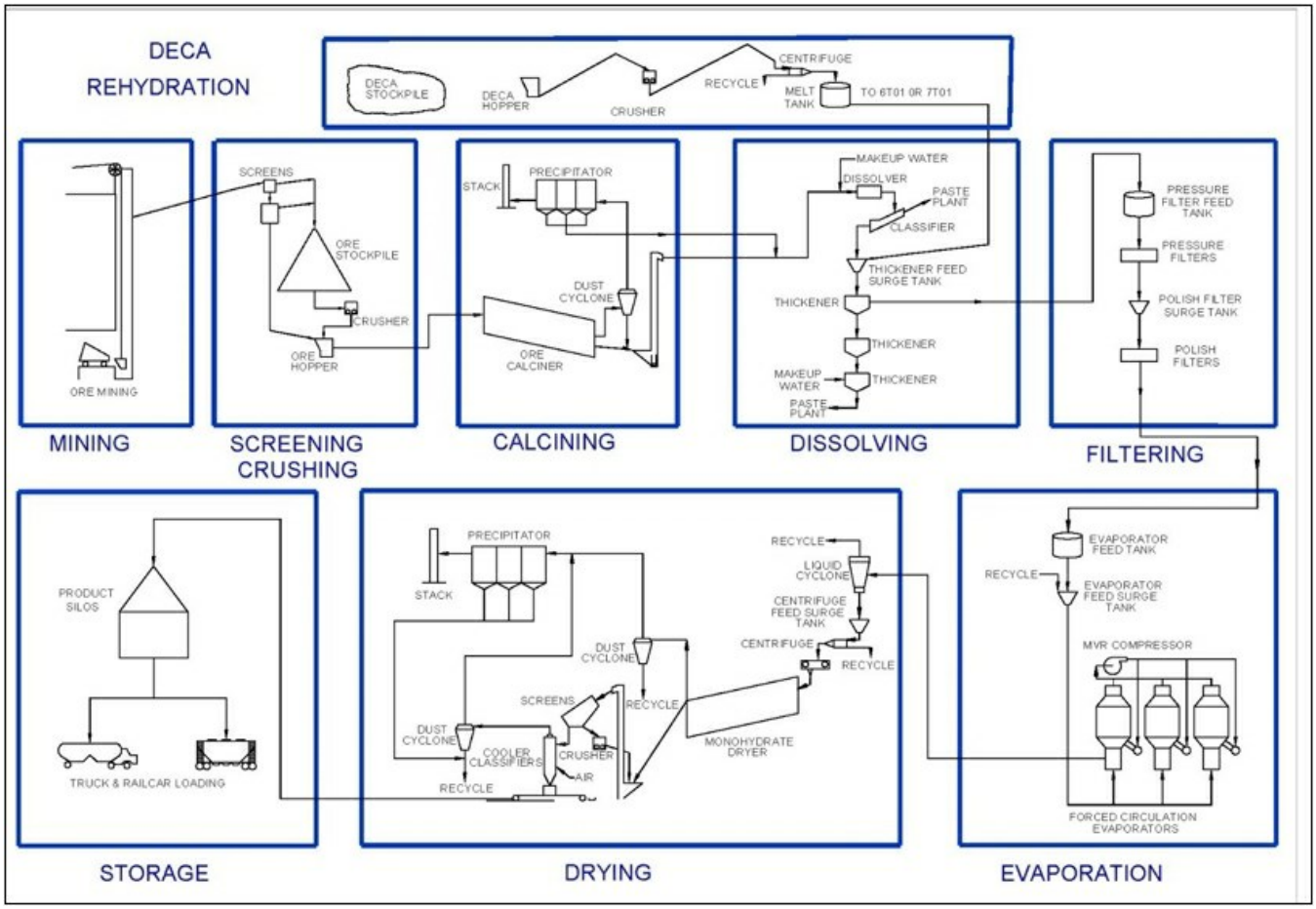


Figure 14.2 Şişecam Wyoming Simplified Process Flow Diagram

14.4 DECA MINING AND PROCESSING

DECA mining was started in 2009 by harvesting the DECA crystals from the evaporative areas of the tailings ponds. DECA precipitates during the fall and winter when temperatures drop. DECA mining occurs in the late winter when the pond area is relatively frozen allowing mining with conventional tracked backhoes and rough terrain haul trucks. The DECA is dewatered and hauled to a 1.8-million-ton stockpile next to the DECA processing plant. DECA is stockpiled during the winter and fed into the plant from the stockpile throughout the year. The DECA processing uses a pick breaker feeder to feed a heated and agitated melt tank. The resulting liquor is feed back into the process in the dissolver sections at the thickeners.

Full scale DECA mining ended in late 2024. Only limited DECA production is anticipated in the future. Future DECA production will be periodic and inconsistent and as such was not considered for this estimate.

15.0 INFRASTRUCTURE

15.1 INTRODUCTION

Şişecam Wyoming's mine and refinery are located 23 miles northwest of the town of Green River, Wyoming. Şişecam Wyoming accessible from Interstate 80 west from Green River then north on La Barge Road, Wyoming Highway 37, to the OCI road, 254 County Road 4.

The Şişecam site is serviced by a dedicated railroad spur line off the main East West Union Pacific rail line. The dedicated railroad spur line connects to the Union Pacific Main line just east of the Genesis Westvaco facilities.

The site infrastructure has been developed over the plus 60 years of operation, is established and is adequate for the purposes of producing soda ash. While the infrastructure is showing its age, Şişecam has demonstrated the willingness to update those areas as necessary. Examples of this are the ongoing update of the electrical mechanical control centers (MCC's), the addition of Shaft #4 with new ventilation fans, the electrical updates of the shaft hoisting systems, the new office change house building, as well as many improvements to the processing facilities.

The Şişecam site road access and rail access can be seen in Figure 15.1. An aerial view of the site indicating major infrastructure is shown in Figure 15.2.

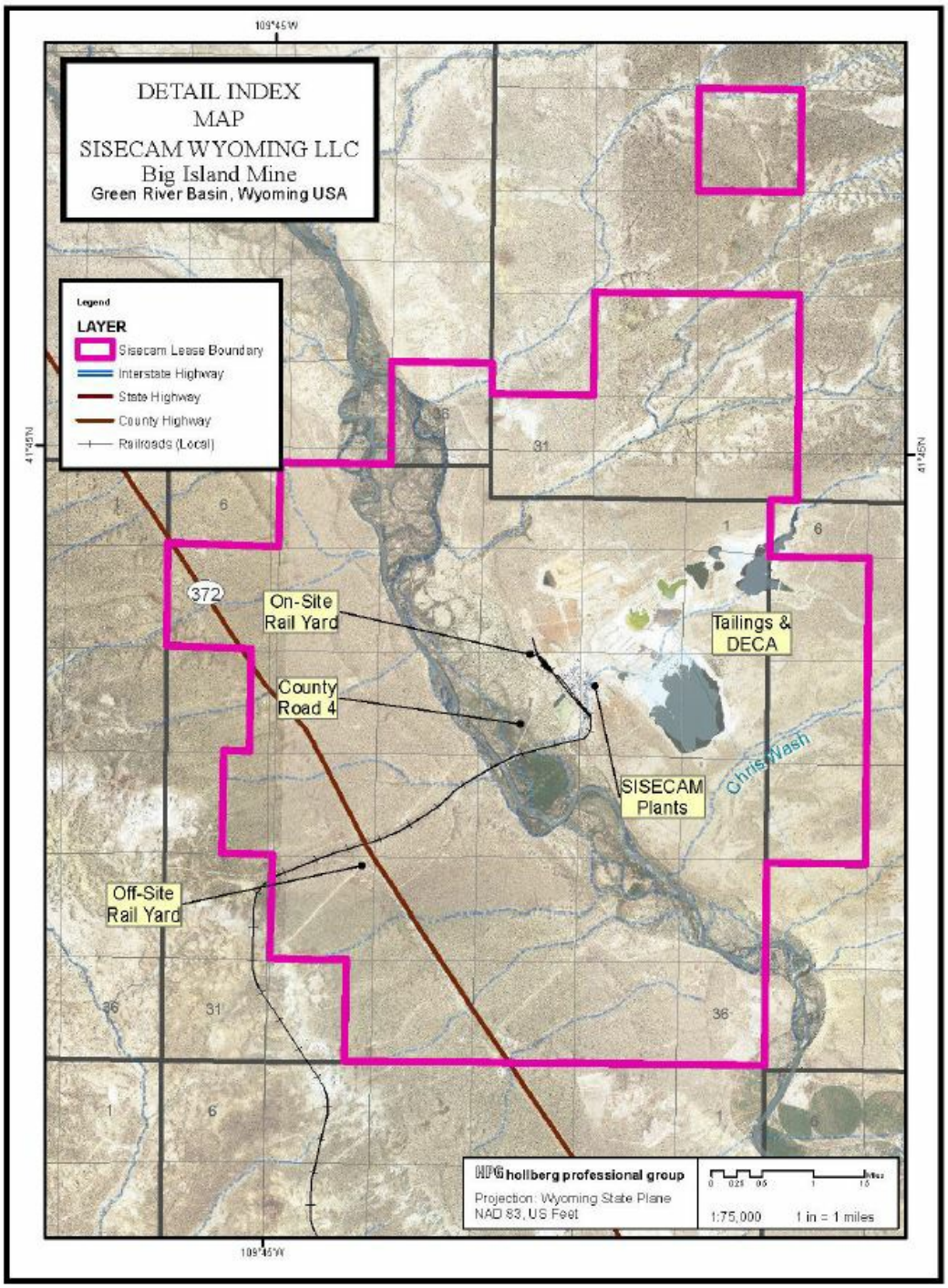


Figure 15.1 **Şişecam Site Access and Rail Infrastructure**

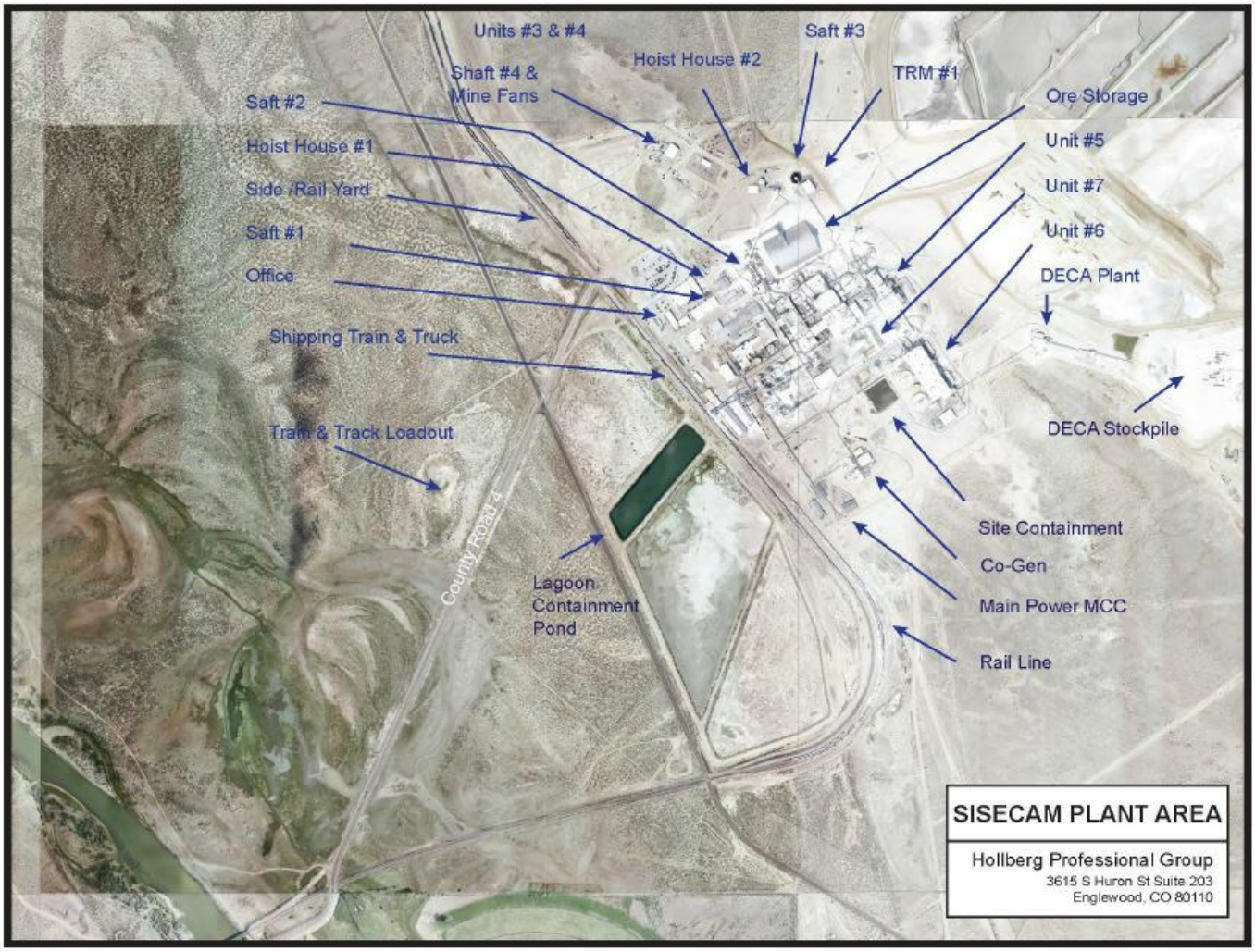


Figure 15.2 Şişecam Site Infrastructure Aerial View

15.2 OFFICES, WAREHOUSES

Şişecam has sufficient office and warehouse facilities. There are multiple buildings for offices, change houses, laboratories, control rooms, maintenance shops, safety offices, machine shops and warehouses. Where necessary, for large equipment and motor spares, Şişecam uses vendors offsite warehouses. In 2020 Şişecam completed the construction of a new office and change house facility to eventually replace the 1960's building.

In the mine there are underground offices, underground shops, and an underground warehouse all dedicated to the mine operations.

15.3 MINE

Şişecam is currently operating six trona mining sections, with each made up of a Joy 12HM26 drum miner, two Joy shuttle cars and a feeder breaker. The mine maintains spare production equipment including a spare CM used for utility or to allow major rebuilds, two spare shuttle cars and a spare feeder breaker. Ore is transported from the working faces by 42" belt conveyors which discharge to 48" mainline conveyors. The mine has over 10 miles of conveyor structure and belting installed and has ample spares.

Underground trona ore storage is limited to approximately 700 tons of capacity between the mine and the hoisting systems. This limited surge capacity does impact overall hoisting efficiencies and production capabilities.

Mine ore is crushed underground in the UG Crushing Facilities which includes two McLanahan dual roll crushers.

The mine has four surface to ore bed shafts used for access and ventilation. Shafts #1 and #2 were developed in 1961 with a common hoist house containing the mechanical hoists. Shaft #3 was constructed in 1981 as a production and ventilation shaft. Shaft #3 has a dedicated hoist house (Hoist House #2) and double drum hoist. Shaft #4 was completed in 2021, as a dedicated ventilation shaft. The shafts are inspected weekly and are repaired as required.

Shaft #1 is 16-feet in diameter and serves as the man and material shaft. Shaft #1 is serviced by an early 1960's Vulcan Iron Works Hoist that has been upgraded over the years with updated braking systems and electrics but is nearing its mechanical life. Şişecam is in the process of replacing this hoist with a new system. The preliminary works for this change were observed during the site visit. Shaft #1 is an intake air shaft with steam heaters.

Shaft #2 is 20-feet in diameter and used as a ventilation and production shaft. With the addition of Shaft #4, Shaft #2 has been converted from the main exhaust ventilation shaft to an intake and production. The shaft is now heated by direct fire natural gas burners. Shaft #2 is serviced by a 1961 Nordberg double drum hoist with dual 500 HP DC motors driven by ABB converters. Over the years this hoist has been upgraded with new brake systems, new ring gear and pinions, and control systems. The hoist has 10-ton balanced production skips with the capability of lifting 500 tons per hour of ROM trona.

The #3 Shaft was constructed in 1981 as a ventilation and production shaft. It is 20-feet in diameter and heated by steam heaters. The shaft is serviced by a 1961 Nordberg double drum hoist with recently installed dual 500 HP AC VFD motors driven by ABB controls. Over the years this hoist has been upgraded with new braking systems, motors, and controls. The hoist has 10-ton capacity balanced production skips with the capability of hoisting 500 tons per hour of ROM trona to the surface.

Shaft #4 is 20 feet in diameter with two parallel 12-foot diameter Spendrup fans driven by 1,500 hp direct drive motors that can be upgraded in the future to 3,000 hp. Only one fan is required to ventilate the mine with the second being a spare. Each fan has a peak capacity of 1,300,000 CFM (cubic feet per minute) of air but are currently being operated at 725,000 CFM which is all the mine currently requires. The additional capacity allows for future production increases and expansion of mine workings for the life of the BIM.

15.4 STORAGE

Şişecam has a 100,000-ton covered and automated trona ore stockpile that is used for ore storage between the mine and processing facilities. This system is filled with ROM or screened trona via a belt conveyor tripper and reclaimed by a Thyssenkrupp drag reclaimer. The stockpile has a working storage capacity of less than 40,000 tons which is not adequate to separate mine production from the processing feed. This does impact overall hoisting efficiencies and production capabilities.

As stated earlier there is a 1.8-million-ton DECA stockpile between the Pond #1 stacking area and the Pond #1 evaporation pond which will only be used periodically.

Finished soda ash is stored in seven vertical storage silos totaling 27,300 tons, which is considered adequate for the current production rates.

15.5 PRODUCT SHIPPING & LOADING

Finished dense soda ash is shipped in bulk by rail, (90%) and truck with a smaller portion bagged and shipped by truck. There are dedicated rail and truck loadouts with scales and a warehouse with bagging lines and storage for supper sacks or 50-pound bags. Union Pacific Railroad Company is the sole rail provider. The current contract with Union Pacific expires on December 31, 2025. Over the 60-year history of the property these contracts have been renewed. Given this history HPG considers it a reasonable assumption that Şişecam will continue to receive rail service into the future at similar costs.

Union Pacific is the rail service, but cars can be transferred to other carriers when necessary. There is a small portion of product that is transported by tandem pneumatic trucks from Şişecam to Bonneville, Wyoming where the product is transloaded from truck to the BNSF Railway.

Şişecam has a dedicated rail car fleet. Şişecam does not own any rail cars but leases approximately 2600 cars.

15.5.1 Rail Yards

To accommodate assembly of unit trains Şişecam utilizes a contract railyard along the La Barge Road (Highway 372) which is privately owned and maintained by others. There are five track lines at the facility to assist with switching empty and loaded cars and prepping them for shipment offsite. There is an estimated 18,400-feet of track owned by the Big Island Mine and Refinery

15.6 TAILINGS FACILITIES

Process tailings disposal, made up of shales, mudstones, and process purge, is split between underground mine workings and surface. Underground disposal is placed as thickened slurry into the old lower bed mined out panels. Surface disposal is placed as thickened slurry into a series of tailings ponds that have been maintained over the life of the facility. For the past few years, Unit 6 tailings have been pumped underground and Units 3 through 5 have been pumped to the surface tailings storage. This is about a one-third to two-third split with the majority of the tailings being placed on the surface in the tailings basin.

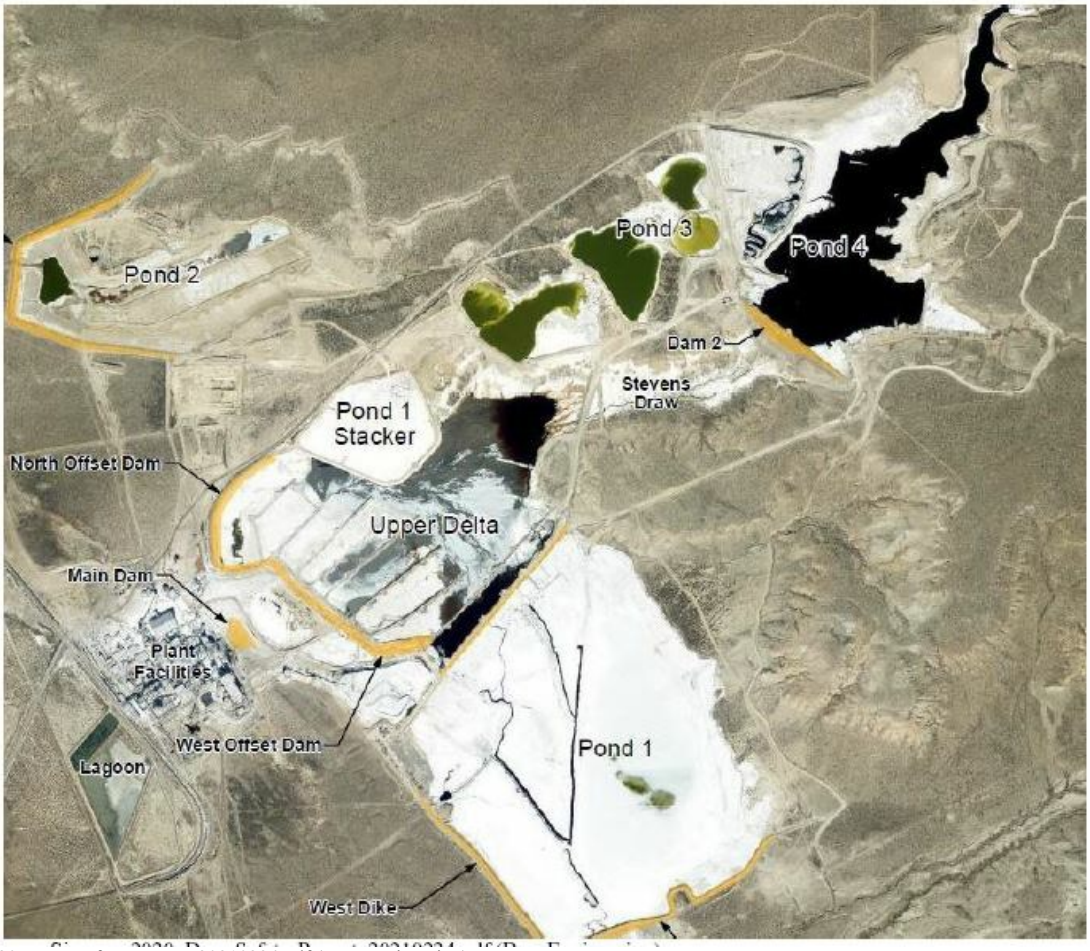
The Şişecam surface tailings facilities are shown in Figure 15.3. The tailings basin facilities have multiple dams and internal dikes. A dam safety review is done annually by a third-party engineering firm. For the purposes of this review, HPG has examined three years of annual Dam Safety Reports completed by Barr Engineering. Barr Engineering has been conducting dam design work and reviews at this site for over 30 years. Barr has also completed an updated dam failure analysis which HPG reviewed.

Surface tailings disposal is currently placed in the Pond 1 Stacker and Upper Delta area where it is allowed to dewater into the Pond 1 evaporation DECA recovery area. Ponds 3 and 4 are used for evaporation and water management to allow for DECA mining.

The recently completed Pond 2, which is a lined tailings pond, was constructed in 2014-2015 and has had minimal use to date. The active pond cells are lined with a geomembrane. Pond 2 will become the primary disposal and stacking area for the coarse tails disposal. In this operating mode, the estimated life of the storage facility with available expansions is over 30 years.

Based on the current surface tailings basin life of over 30 years and available alternative disposal areas and methods HPG considers the assumption that Şişecam Wyoming will maintain adequate tailings disposal storage for the life of the reserves to be reasonable.

Additional information on the surface tailings facilities is available in Section 17.4



Source: Şişecam-2020_Dam-Safety-Report_20210224.pdf (Barr Engineering)
Figure 15.3 Aerial View Tailings Facilities

15.7 UTILITIES

The energy sources and utilities for the Şişecam site include natural gas, electricity, steam, and raw water. Natural gas is used for steam generation, electrical generation, and process heating. Electricity is purchased from Rocky Mountain Power (RMP) and generated with a Co-Gen gas turbine and a backpressure steam turbine. Steam is produced from gas fired boilers and the Co-Gen plant. Water is pumped from the Green River, which crosses the lease area.

15.7.1 Electrical

The site electrical demand is approximately 60-62 megawatts (MW). The primary electrical source is provided by RMP via the RMP Raven Substation located on La Barge Road. The substation is fed by two 230 kV independent high voltage lines that are switched to two independent 34.5 kV power lines to the Şişecam site main MCC. This MCC has an additional 34.5 kV independent feed line.

Şişecam also has in-house co-generation. The oldest is a 12.0 MW backpressure steam turbine driven by either the three conventional gas boilers (H03, H04 & H05) or excess steam from the Co-Gen Plant which was taken out of service in 2024. The second electrical generation source is a recently commissioned combined cycle gas turbine. The Co-Gen facility produces up to 31 MW of electricity and steam for generation and process use.

15.7.2 Natural Gas

Natural gas is supplied to Şişecam by Midstream-Ottco through a supply line with a capacity of approximately 50,000MMBTU/day to the slug catcher with current required usage around half of available supply. From the slug catcher there are two natural gas pipelines. One pipeline feeds the processing plants and powerhouse and the second pipeline services the Co-Gen Plant. The capacity of the original pipeline was sized for when the processing plants were triple effect steam evaporators. Conversion to electrically driven MVR's has reduced the process plant demand, resulting in the main natural gas pipeline being oversized for the current facility. The Co-Gen line was designed for multiple processing units and has capacity for the Co-Gen plant, as well as an additional similarly sized unit.

15.7.3 Steam

Steam is produced by three natural gas heated boilers and the newly constructed Co-Gen gas turbine. The original powerhouse has been in service since 1961 but has had multiple upgrades over the years and is still a viable powerhouse for the foreseeable future. The Co-Gen plant uses a heat recovery steam generator (HRSG) heated by the gas turbine to produce steam that drives the associated backpressure turbine and generator for the combined cycle. The boilers produce 600-pound steam that is lowered via let down stations or backpressure generators to either 150-pound or 35-pound steam for boiler superheaters, processing, and heating.

15.7.4 Water

Raw water for the site is pumped from the Green River filtered for use in the process or treated to potable water standards for internal and sanitary use. Şişecam has adjudicated water rights equal to 7.756 MM (7756K) gallons per day (12.0 cfs) under State Engineer's Office of Wyoming Permit No. P22075D. These rights are more than adequate for the site needs. The average water withdrawal between 2023 and 2024 averaged 77.0 MM gallons per month or 210.8 K gallons per day.

Process water, tailings decant water and steam condensate water are recycled to minimize water usage.

Water for domestic and sanitary use is processed using carbon/sand filters, mixed media pressure filters, and chlorinated to the same standards as municipal water systems. The water is sampled and tested according to municipal water standards regulated by the Environmental Protection Agency. Şişecam has had deviations to these standards of a total organic carbon running annual average (RAA) ratio below 1.00 in 2019, 2020 and 2021. Şişecam made modification and repairs to the systems and reported on August 23, 2021, that the systems were in compliance. There have not been any deviations since.

16.0 MARKET STUDIES

As stated earlier, the economic viability of these reserves is based upon the long profitable history of the Big Island Mine and Refinery producing and selling soda ash. Şişecam has an extensive history of consistent sales with an established customer base, logistics and marketing. Şişecam has multiple contracts for soda ash sales both short and long term.

As part of this evaluation HPG reviewed confidential marketing studies provided by Şişecam. These studies indicate a steady increase in demand for soda ash long into the future. Price fluctuations are forecast based on expected additional new production and/or shutdowns of synthetic plants.

16.1 SODA ASH DEMAND AND PRICING

Soda ash is a basic industrial mineral used in manufacturing for thousands of years. As a basic commodity, soda ash demand is strongly correlated with gross domestic product (GDP). As developing economies grow and industrialize the world demand for soda ash has consistently increased. Historical soda ash demand has increased 2-3% annually with this trend expected to continue well into the future. Significant increase in demand is predicted in India, Africa, South America and China's demand continues to grow. US demand for soda ash is expected to remain constant with little if any growth.

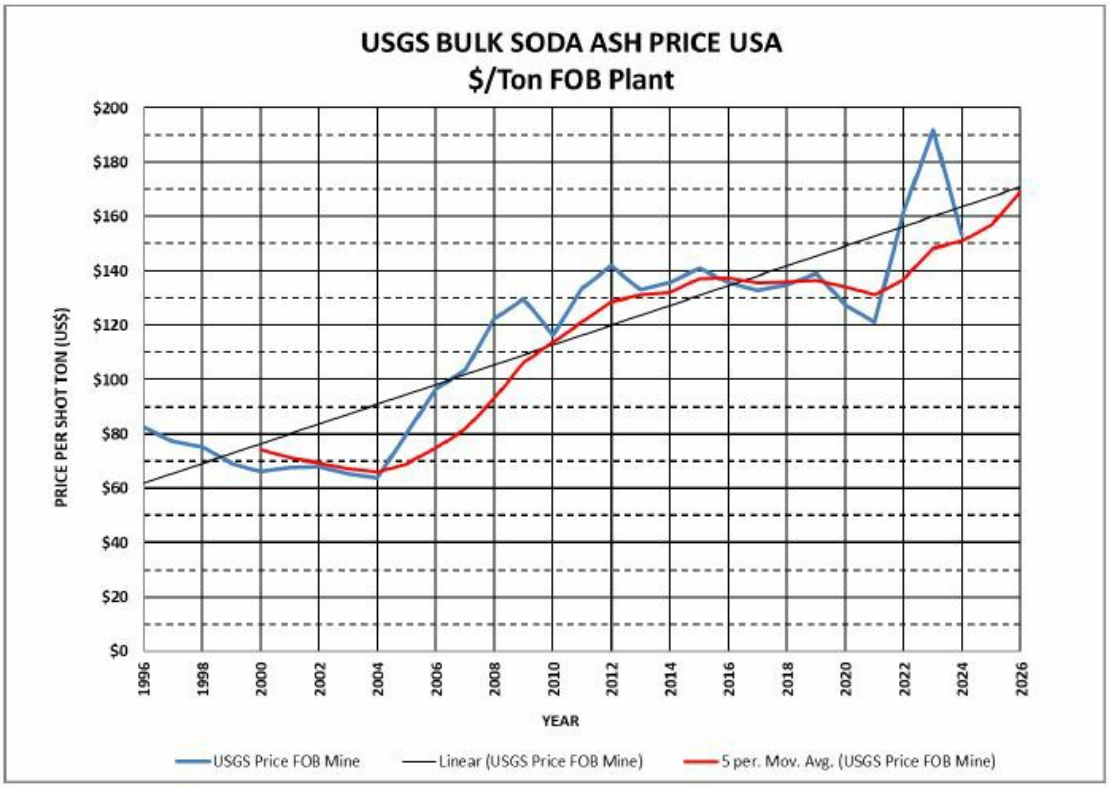
The end uses of soda ash are consistent with growth in solar glass and lithium batteries as lithium carbonate. Historically, glass making was 50% of demand. That has grown to nearly 60% for flat glass, bottled glass and increasingly solar glass. The increase in solar glass is offsetting decreases in bottled glass. Uses for chemicals, soaps, detergents, sodium bicarbonate make up the remaining demand. The projected demand for electric vehicles has created an increasing market for soda ash in the manufacturing of lithium carbonate needed for the batteries. This demand is expected to double in the next ten years. Similarly solar glass has become an important market but is dominated by China.

China dominates the soda ash market as it has become the "manufacturing hub" of the world. Demand in China is governed by domestic soda ash production, China and world GDP growth, and China's government policies. At times China is an importer and other times an exporter. These swings impact world soda ash prices given they consume over 40% of world demand.

Historical soda ash pricing has been controlled by general global economic conditions and by the impact of added or removed production. Both synthetic and natural soda ash manufacturing facilities require significant capital investment with a trend towards larger high production facilities to reduce long-term costs. Proposed new production plants are made up of multiple trains producing 500,000 to 800,000 tons annually with typical new facilities producing 1-3 million tons annually or more.

When new production has come online the relatively large influxes impacts the overall soda ash supply and demand by putting pressure on prices first in the domestic market but also internationally until the consistently increasing soda ash demand catches up. These swings in soda ash price can be seen in Figure 16.1 showing the historical US soda ash price FOB the Green River plants and are typical for an industrial commodity. The overall trend is for steadily increasing soda ash price.

Soda ash prices started declining in 2024 due to China's increased production. The average 2024 USGS price was $153/ton. Historically, as excess supply is absorbed soda ash prices begin to rise as shown by the trendlines in Figure 16.1.



Source: USGS 2025

Figure 16.1 USGS Published Soda Ash Prices $/Ton FOB Plant

16.2 SODA ASH SUPPLY

Multiple soda ash brown field and green field expansion projects have been announced or are currently being constructed. US expansion in the is expected to add 6 to 7 million tons of production by the early 2030's. China has added nearly 6 million tons of new natural soda ash capacity with plans for an additional 3 million tons. This follows the closure of some of China's synthetic plants but is a net increase in the global supply. The result of these additions has been a decrease in soda ash pricing since its high in 2023. This is a recuring theme for global soda ash production with relatively large expansions causing downward pressure on pricing then slowly increasing pricing as the supply is absorbed or high costs plants are closed. The higher cost synthetic producers are impacted the most. Their costs are 50% higher than the natural soda ash producers and eventually low prices have forced closures of these plants. These projected oversupply periods do impact operating rates at the natural soda ash producers. As with all commodities, the low-cost producers survive, with natural soda ash production being the lowest cost.

16.3 MARKETING DISCUSSION

HPG offers the following remarks:

- As a basic industrial mineral, soda ash demand has historically increased 2-3% per year. The rapid increase in industrialization in emerging economies of China, India, Thailand, and Indonesia are expected to continue to drive this demand for the foreseeable future;
- Green River's naturally produced soda ash has a historic cost advantage over synthetically produced soda ash as illustrated by the long history of the Green River Basin production being exported successfully throughout the world to countries with local synthetic soda ash production (i.e., China, Mid-East, and Europe);
- The high cost and environmentally undesirable synthetic soda ash plants will continue to be under pressure by the naturally produced ash and will continue to shut down over time;
- The continued increase in soda ash demand will continue to absorb increases in production with Şişecam's main competition being other US producers; and
- Şişecam, is an end user. As one of the largest glass producers in the world Şişecam is creating a vertically controlled supply chain from raw soda ash to finished glass.

For the purposes of this estimate a 2025 soda ash price of $165/ton FOB plant was assumed. This price is based on USGS pricing as discussed above and is consistent with Sisecam's historical revenues and confidential market studies.

17.0 ENVIRONMENTAL STUDIES, PERMITTING, AND PLANS, NEGOTIATIONS OR AGREEMENTS WITH LOCAL INDIVIDUALS OR GROUPS

17.1 ENVIRONMENTAL STUDIES

Şişecam Wyoming operates a facility located approximately 23 miles north of the City of Green River in Sweetwater County. The facility includes the processing and refinement of Trona ore into Soda Ash, an underground mine (Big Island Mine), ore hoist, mine fans, surface tailings disposal ponds, evaporation ponds, sewer ponds, site containment ponds, and administration and supporting structures.

Access to Şişecam Wyoming is by County Highway 6 from Wyoming Highway 372 and County Highway 4. Union Pacific Railroad provides a rail spur to transport product. Adjoining this spur is a rail holding yard adjacent to WY 372.

Şişecam has maintained current permitting requirements. The most recent Environmental Analysis studies include:

- Tailings Pond 2 rehabilitation and expansion;
- Coarse Tailings disposal and TRM upgrades; and
- Updated Tailings Dam Safety and Dam failure analysis; and
- Air quality testing and permitting.

17.2 CLIMATE

The Şişecam Wyoming facilities are located in the Green River drainage of the upper Colorado River system. Situated in a high intermountain basin bounded by the Wyoming Range to the West, Uinta Mountains to the south and the Wind River Range to the northeast, mean elevation exceeds 6,000-feet. Climate is dry, cold-temperate-boreal and characterized by limited rainfall (less than 8 inches) with long, cold, dry winters and warm-hot, summers with occasional storm producing flash floods. Evaporation exceeds 36 inches resulting in little excess water, limiting the majority of vegetation to the Green River flood plain. Wind generally blows from a southwesterly direction.

17.2.1 Temperature and Precipitation

Climate is classified as semi-arid with little rainfall. The average annual precipitation measured at the monitoring station located in Farson, Wyoming, near this facility is 7.83 inches. Data from 1991 through 2020 show precipitation peaks during May through July, with the heaviest snow months occurring in November into March. The region has relatively cool temperatures. The average annual temperature at the facility is 37.8 degrees F, with average extremes ranging from -4°F to 82°F. On the average, the hottest day occurs in July and August, the coldest in January and February, and the frost-free season lasts approximately 3 to 4 months.

17.2.2 Winds

The Green River basin is subject to strong and gusty winds. During the winter months, strong winds are often accompanied by snow, which produces blizzard conditions and drifting snow.

The frequency and strength of windy conditions greatly affects dispersion and transport of pollutants in the region. Winds from the west and southwest account for 37 percent of the total winds in the area. Prevailing westerly winds are fairly consistent throughout the year. Low humidity and constant wind accelerates evaporation. Evaporation at times is five times greater than precipitation.

17.3 HYDROLOGY

17.3.1 Surface Water

The Green River, a tributary of the Colorado River, flows through the Şişecam Wyoming lease area and is located immediately west of the facilities. Dry peripheral gullies and washes flow through the lease area into the Green River. The intermitted flow regime is mainly the result of snowmelt or high intensity short duration storm events in the summer and are Class 4 surface waters because of hydrologic or natural water quality conditions do not have the potential to support fish (WDEQ 1997). The Green River is under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and the State Engineer's Office of Wyoming.

Surface water monitoring, Green River, is performed in accordance with the approved monitoring plan. Şişecam is a non-discharge facility.

17.3.2 Groundwater

Regional groundwater is characterized by shallow and deep resources. An alluvial zone composed of unconsolidated sand and gravel range in depths to 50-feet is associated with the Green River flood plain. Immediately below the alluvium are consolidated sediments of the Bridger Formation and the Laney Member of the Green River Formation. There is a veneer of weathered rock to depths of 60-feet which acts as groundwater flow paths. The consolidated Bridger and Laney contain perched sandstone lenses at various depths that yield limited flows.

In primary source of groundwater at the Şişecam Wyoming facility is seepage from the exiting tailings storage complex. Evaporation concentrates the pond brines resulting in elevated specific conductance found in the groundwater in the surficial fractured bedrock and alluvium beneath the facility. At the present, three groundwater containment pump-back systems (System 1 & 2, System 3, and System 4) intercept groundwater migrating from the tailings complex towards the Green River. Engineering data indicated the pump-back systems also promotes tailings dam safety by lowering fluid levels and therefore reduces uplift pressures on the structures.

Supplementing the groundwater capture through the pump-back system, a continuous grout wall exists on the downstream side of Pond 1 in the West Dike and South Dam. This grout wall was constructed by drilling into the unconsolidated bedrock to depth below weathering. The purpose was twofold: groundwater containment and dam safety.

A Groundwater and Surface Water Monitoring Plan is in effect under the Land Quality Permit. Fluid levels, specific conductance, and general chemistry are measured semi-annually at wells across the site to monitor the extent and migration of seepage from the tailings complex. Quarterly monitoring is performed at critical locations, specifically around Pond 2. Mass flux of total dissolved solids are estimated from measured specific conductance values and water elevations using a site-specific relationship that has been developed over decades of monitoring. These systems are performing as designed and are accepted by the regulatory bodies.

17.4 WASTE AND TAILINGS DISPOSAL

The low to zero toxicity waste generated by the mining and the processing facilities, (mine and process tailings), are deposited into a series of storage impoundments (ponds) or are re-injected as thickened slurries into abandoned area of the mine. Process tailings are made up of shales, mudstones, and process purge are exempt from hazardous waste regulation under Section 3001(b) of the Resource Conservation and Recovery Act (RCRA).

Since 1998 process tailings disposal was split between underground mine workings and on the surface. Underground disposal was placed as thickened slurry into the old lower bed mined out panels. Surface disposal was placed as thickened slurry into a series of tailings ponds that have been maintained over the life of the facility. Şişecam is converting the tailings disposal from a thickened slurry to a coarse tailings disposal which will separate the coarse and fine tailings. The coarse tailings will be stacked in the recently completed lined Pond 2 disposal area and the fine material will be disposed of in the Upper Delta. The separation of coarse tailings will provide an opportunity for stacking utilizing earth moving equipment and extending the life of the current tailings ponds and mine TRM systems. With this change, the life of Pond 2 is estimated to be 30 years, Figure 17.3.

Based on the current surface tailings basin life of over 30 years and available alternative disposal areas and methods HPG considers the assumption that Şişecam Wyoming will maintain adequate tailings disposal storage for the life of the reserves to be reasonable.

17.4.1 Surface Tailings and Evaporative Impoundments

The Şişecam Wyoming tailings facility has four surface evaporation tailings impoundments (ponds) that are located primarily within prehistoric playa lakes. Except for Pond 2, which has a lined membrane, the remaining ponds are unlined.

Historical (pre-1995) mine tailings produced through the refining process of trona were deposited initially into an unlined paleo playa lake identified as Pond 1. Playa at Pond 2 was briefly utilized for tailings disposal and abandoned shortly after initial startup. Pond 4 was established in the drainage into Pond 1 for fluid management. Tailings solids management was engineered as a series of stacker dams within the Pond 4 drainage and identified as Pond 3.

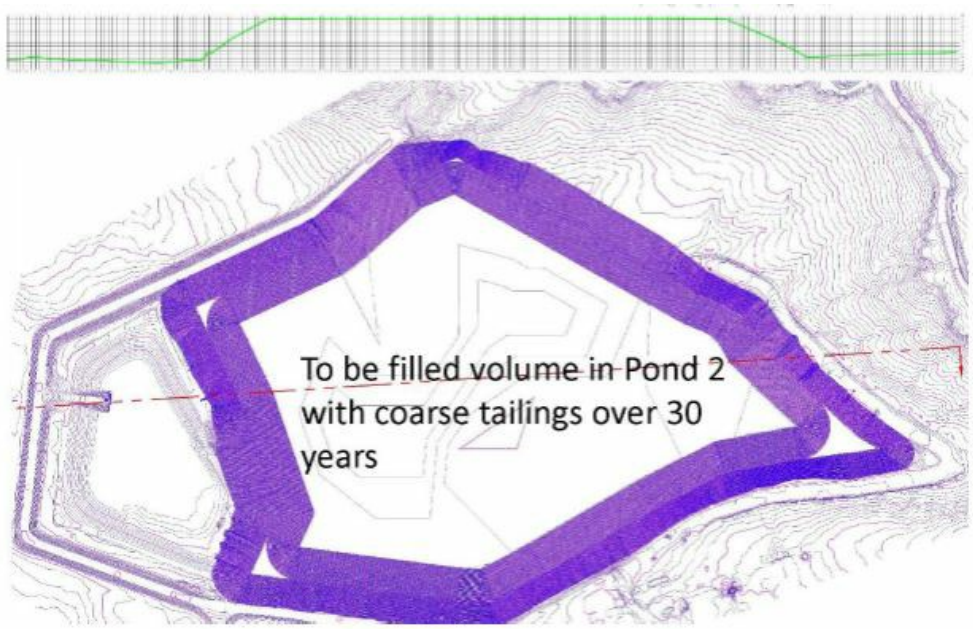
Current tailings management is comprehensive. Pond 1 is split into two portions with the installation of a cross-delta dike, the Upper Delta and DECA recovery areas (Figure 17.1 and Figure 17.2). The Upper Delta is currently the primary disposal area for tailings through a series of containment cells. Because the tailings are distributed as a heavy slurry, brines, and fluids flow down gradient into the lower DECA recovery area of Pond 1. Fluid level in this area is managed by pumping excess to Pond 4. With the conversion to coarse tailings disposal, Pond 2 will be used for coarse tailing disposal. Pond 3 and Pond 4 areas are utilized to enhance evaporation.

Source: Barr- Ciner-2020_Dam-Safety-Report_20210224-signed.pdf

Figure 17.1 Şişecam Tailings Impoundments and Evaporative Ponds

Source: Barr Engineering, 50191095_Upper_Delta_2015_Tailings_Plan_Final.pdf

Figure 17.2 Şişecam Tailings Pond #1



Source: Şişecam

Figure 17.3 Şişecam Tailings Pond #2 Coarse Tailings Dry Stack

17.4.2 Mine Tailings Deposal

Currently a portion of the tailings produced during the refinement of trona ore is disposed through a series of pipelines into the abandoned area of the underground mine. The process is identified as TRM (Tailings Return to Mine) unit permitted under UIC (Underground Injection Control) permit and regulations. With the conversion to coarse tailings disposal, tailings will no longer be disposed of in the underground workings.

17.4.3 Refuge

Şişecam Wyoming maintains a permitted landfill for refuge and trash within their Land Quality Permit.

17.5 VEGETATION

In general, five major vegetation communities have been identified in the lease area: Upland Sagebrush, Rocky Breaks, Saline Flats, Sagebrush Riparian, and River Floodplains. The high semi-arid climate of the area is dominated by upland drought-resistant plants: sagebrush, rabbitbrush, saltbush, small forbes and other limited plants. Confined area of the Green River flood plain contains cottonwoods, willows, shrubs, and grasses which require more moisture.

The Şişecam Wyoming lease area is dominated by upland drought-resistant plants except for the confined area of the Green River flood plain, where more moisture-requiring plants grow.

17.6 WILDLIFE

Wildlife species found in the Şişecam lease area are closely associated with available vegetation and habitat.
Big game (moose, deer, and elk) is frequently found along the Green River, while the uplands contain herds of pronghorn antelope.

Greater sage-grouse mate and nest near the Şişecam lease area and are considered a threatened species. The birds are most often seen from late spring to late fall, especially in the early mornings or late evenings. Şişecam lease area is not within the core sage-grouse management area, nor does it have any defined lek areas within the lease.

Raptors including Golden Eagle, Bald Eagle, Osprey, Turkey Vulture, Prairie Falcon, Hawk, and owl inhabit the area. Lessor birds include dove, woodpecker, crow, raven, magpie, swallow, wren, thrush, starling, warbler, lark, finch, and hummingbird.

Waterfowl includes goose, swan, duck, teal, loon, pelican, heron, Sandhill crane, and gull.

Şişecam Wyoming maintains permits to capture waterfowl that land on the tailings evaporation ponds during migration with US Fish and Wildlife Services and Wyoming Game and Fish Department. The alkaline waters of the ponds reduce the oils in the waterfowl plumage and precipitate salts out in the feathers causing hypothermia and the birds to be too heavy to fly off on their own. The ponds are monitored daily in the fall and any captured birds are cleaned and supported until they can be released on the Green River. Activity is reported annually to the regulatory authorities.

Game fish including trout, salmon, catfish, and bass have been noted in the Green River. Other species of fish, reptiles, amphibians, and insects are common. Table 17.1 lists other mammals in the area.

TABLE 17.1
OTHER MAMMAL SPECIES

Mountain Lion	Red squirrel	Boreal vole
Bobcat	Ground squirrel	Mountain vole
Coyote	House mouse	Sagebrush vole
Badger	Pocket mouse	Beaver
White-tail jackrabbit	Deer mouse	Foxes
Cottontail rabbit	Pack rat	River otter
White-tail prairie dog	Kangaroo rat	Bats
Porcupine	Woodrat	Shrews

17.7 PERMITTING AND ENVIRONMENTAL REPORTING

Şişecam Wyoming permitting, and environmental reporting appear to be current. The primary permit agencies include, Federal and Wyoming State Departments and are listed below in Table 17.2 .

Areas where Şişecam has incurred resolvable challenges with environmental compliance include process emissions, fugitive dust, tailings, pond seepage, site containment, and drinking water TOC. The drinking water TOC problem and site containment overflow were primarily operational in nature and appear to be solved.

Process emissions will continue to be challenged by ever tightening regulations. This will require periodic upgrades of both the natural gas burners as well as the pollution control equipment, precipitators, and baghouses.

Based upon the reports and documentation provided by Şişecam, the tailings pond and associated seepage continues to be controlled and managed successfully. Şişecam has a long history of controlling this issue and through the daily monitoring and annual third-party reviews has shown the necessary efforts to identify issues and manage them into the future. The third-party review recommendations are reportedly being acted upon.

TABLE 17.2
ŞIŞECAM WYOMING OPERATING PERMITS

Agency	Division	Type of Permit/License/Authorization	Permit/Authorization/License Number	Authorization/Approval Date	Expiration Date
State of Wyoming	-	Sodium Leases	25779, 25971, 26012, 42570, 42571	Varies	Varies
Sweetwater County	Construction	Construction Permits	-	Varies	-
Sweetwater County	Planning and Zoning	Zoning Update	-	Varies	-
US Bureau of Land Management	-	Unit 8 Construction Authorization	DOI-BLM-WY-D040-2020-0038-EA	4/9/2021	-
US Bureau of Land Management	-	Right-of-ways	WYW-0136237, WYW-042032	Varies	Varies
US Bureau of Land Management	-	Sodium Leases	WYW079420, WYW101824, WYW0111730, WYW0111731, WYW190736	Vaires	Varies
US Department of Transportation	-	Hazardous Materials Certificate of Registration	061324550185GI	7/1/2024	6/30/2027
US Environmental Protection Agency	Air	ICIS-Air	WY0000005603700001	-	-
US Environmental Protection Agency	Air	Green House Gas (e-GGRT)	GRGRP ID 528326	-	-
US Environmental Protection Agency	Drinking Water	Public Water System	WY5600634	N/A	N/A
US Environmental Protection Agency	SPCC	SPCC Plan	-	8/1/2022	8/1/2027
US Environmental Protection Agency	TSCA	EPA Registry ID for the Toxic Substances Control Act Reporting (TSCA106041)	110007900129	-	-
US Environmental Protection Agency	Waste	Very Small Quantity Generator	WYD083919621	N/A	N/A
US Fish and Wildlife Service	Migratory Birds	Special Purpose - Miscellaneous	MBPER10464891	5/7/2024	3/31/2027
US Nuclear Regulatory Commission	-	License	49-11578-01	7/25/2022	5/31/2025
Wyoming Department of Environmental Quality	Air Quality Division	Title V Operating Permit	P0035186	5/26/2020	5/26/2025
Wyoming Department of Environmental Quality	Air Quality Division	Asbestos Annual Notification	2024022	1/1/2024	12/31/2024
Wyoming Department of Environmental Quality	Land Quality Division	Permit to Mine	257 PT	3/7/1975	N/A
Wyoming Department of Environmental Quality	Water Quality Division	WYPDES General Mineral Mining Except Fuels Stormwater	WYR320025	4/1/2018	3/31/2023 - Under Adminstrative Approval
Wyoming Department of Environmental Quality	Water Quality Division	WYPDES General Large Construction Activities Stormwater	WYR104976	9/11/2020	8/1/2025
Wyoming Department of Environmental Quality	Water Quality Division	Underground Injection Control Class SB1	SB1-98-1 (Facility WYS037-043)	2/17/1999	N/A
Wyoming Game and Fish Department	-	Chapter 33 Permit	1090	1/1/2024	12/31/2024
Wyoming Game and Fish Department	-	Chapter 10 Permit	412	1/1/2024	12/31/2024
Wyoming Office of Homeland Security	Tier 2	Emergency and Hazardous Chemical Inventory	-	-	-
Wyoming State Engineer's Office	Groundwater	Industrial/Pollution Control Groundwater Wells	P205330.0W, P205326.0W, P89290.0W, P89291.0W, P89292.0W, P119443.0W, P118542.0W, P205327.0W, P107218.0W, P107219.0W, P107219.0W, P107216.0W, P107217.0W, P107221.0W, P205329.0W, P205328.0W, P210412.0W, P210413.0W, P212356.0W, P212375.0W	Varies between 1992 and 2020	Varies between 12/31/2037, 12/31/2056, and 12/31/2082
Wyoming State Engineer's Office	Reservoirs	Sewage, Tailings, and Evaporation Ponds	P10445.0R, P14035.0R, P14373.0R, P7809.0R, P8586.0R, P8587.0R, P8588.0R, P8589.0R, P8590.0R, P9835.0R, P9835R-2	Varies between 1979 and 2015	N/A
Wyoming State Engineer's Office	Water Rights	12.0 CFS from the Green River	P22075.0D	2/1/1960	N/A

17.7.1 Air Quality Permit

Criteria air pollutant concentrations are measured by the State of Wyoming Department of Environmental Quality Air Quality Division and are subject to the Clean Air Act and Wyoming Air Quality Standards and Regulation.

The Şişecam Wyoming refinery is located above the underground mining operation. This plant is operated in accordance with the provisions of W.S. 35-11-203 through W.S. 35-11-212 and Chapter 6, Section 3 of the Wyoming Air Quality Standards and Regulations. Air Quality Operating Permits (Permits No. P0024380, P0038440, No. P0035186) require monitoring for a variety of air quality pollutants including particulate matter. These permits were renewed and accepted in 2024.

Particulate matter is the primary pollutant from the surface processing, ore storage, DECA and tailings activities and is an area where Şişecam has exceeded standards. Şişecam has an active consent decree as a settlement of a violation notice received in December of 2021, from Air Quality concerning PM10 monitoring, the No. 2 Crusher Area and Ore Stockpile building. The settlement was reached May 21, 2024, with Şişecam paying a fine of $26,000 and agreeing to modify beltlines, install multimodule baghouses and implement inspections and maintenance plans. Design work for the changes needs to be completed by June 2025 with installation complete within 24 months of obtaining all required permits for the new equipment. Funds have been budgeted, and design work is ongoing.

Current air quality total estimated emissions are located on Table 17.3.

TABLE 17.3
ŞIŞECAM TOTAL FACILITY ESTIMATED EMISSIONS

POLLUTANT	EMISSIONS (TPY)
CRITERIA POLLUTANT EMISSIONS	
Particulate Matter	944
PM10 Particulate Matter	1,310
PM2.5 Particulate Matter	141
Sulfur Dioxide (SO_2)	8
Nitrogen Oxides (NO_X)	713
Carbon Monoxide (CO)	3,050
Volatile Organic Compounds (VOCs)	580
HAZARDOUS AIR POLLUTANT (HAP) EMISSIONS	187
GREENHOUSE GAS EMISSIONS (CO_2e)	1,895,021
OTHER REGULATED POLLUTANTS	

Source: Emission estimates are from the operating permit application and Ch 6, Sec 2 permits P0038440, and represent the authorized equipment configuration. For informational purposes only. These emissions are not to be assumed as permit limits.

US EPA Agency Identification No. for Şişecam Wyoming is GRGRP 528326.

Greenhouse gasses (GHGs) have been raised as a concern due to the greenhouse effect. The greenhouse effect is a theory that certain gases in the atmosphere impede the release of radiation from the earth, trapping heat in the atmosphere like glass in a greenhouse. Major GHGs currently include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (NO_2). Currently, the WDEQ-AQD does not have regulations regarding GHG emissions, although these emissions are regulated indirectly by various other regulations.

In October 2009, the US EPA issued the final mandatory reporting rule for major sources of GHG emissions. The rule requires the reporting of selected GHG emissions, including CO_2, CH_4, NO_2, and some halogenated compounds. USEPA/GHGP reported at the Şişecam Wyoming facility for 2023, 815,700 total metric tons of GHSs, representing approximately 40-50% of the other soda ash produces annual GHG production. Table 17.4 is the 2020 printout of the Şişecam Wyoming GHG inventory for 2024. Table 17.5 shows Sisecam's historical total greenhouse gas emissions totals by year.

TABLE 17.4
2020 ŞIŞECAM TOTAL GREENHOUSE GAS EMISSIONS

Data Year 2023

Sisecam Wyoming LLC

254 County Rd 4-6
GREEN RIVER, WY, 82935

Latitude: 41° 42.60' N
Longitude: 109° 40.80' W

GHGRP Id: 1005621
FRS Id: 110071162113
NAICS Code: 212390

View reported data

Download reported data (XML)

Facility Information | Facility Emissions by Year

Total Facility Emissions in metric tons CO_2 equivalent (mt CO_2e) (AR4 GWPs, excluding Biogenic CO_2)	486,647
Emissions by Gas in mt CO_2e (AR4 GWPs)	
Carbon Dioxide (CO_2)	486,144
Methane (CH_4)	229
Nitrous Oxide (N_2O)	274
Emissions by Source/Process in mt CO_2e (AR4 GWPs, excluding Biogenic CO_2)	
Stationary Combustion	486,646
Soda Ash Manufacturing	328,442
Information on Stationary Combustion	
Types of Fuels Used	Natural Gas
Measurement Methods Used	Mass Balance
Number of equipment groupings	8
Information on Soda Ash Manufacturing	
Number of manufacturing lines used to produce soda ash not monitored by CEMS	2

Source: USEPA/GHGP Facility Details, https://ghgdata.epa.gov/ghgp/service/facilityDetail/2023

TABLE 17.5
ŞIŞECAM TOTAL GREENHOUSE GAS EMISSIONS
BY YEAR **2015-2023 (000 MT)**

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
703.4	741.4	767.5	752.2	737.7	797.0	813.1	854.1	843.7	815.1

Note: 2011-2012 Type of Fuel was Coal and Natural Gas, 2013-2023 Natural Gas Source: https://ghgdata.epa.gov

17.7.2 Land Quality Permit

Wyoming Department of Environmental Quality Land Quality Division issued Large Mining Permit No. 257. Şişecam annually reports topics including changes in permittee information, quantity of ore mined, mine planning, acres disturbed, new construction, environmental areas, monitoring activities, exploration report, and reclamation report and performance bond estimate.

Supplemental to this document, the US Bureau of Land Management on a five-year basis receives and similar report with more detail on mining activities. The 5-year BLM report is a stipulation of the mineral lease.

17.7.3 Underground Injection Permits

Wyoming Department of Environmental Quality Water Quality Division issues UIC Permit Facility WYS037-043. Reported annually under the 5B1-98-1 General Permit. Şişecam Wyoming tailings has two disposal streams. The primary disposal method is the surface tailings pond. Secondary disposal is tailings injected into abandoned areas of the underground mine. This permit requires annual reporting of a summary of tailings material injected into the mine.

17.7.4 Storm Water Discharge Permit

Wyoming Department of Environmental Quality Water Quality Division authorizes storm water discharge under permit No. WYR320025. This general permit was issued in 2018 and is reviewed on a five-year basis. In June 2020, a major storm event occurred causing erosion and discharge of process water onto previously reclaimed lands. No water was discharged to the Green River. The spill was reported immediately after the event to the Wyoming Department of Environmental Quality Land Quality Division as well as the BLM. After inspection by the LQD office, recommendations were made and completed.

17.7.5 Drinking Water System

US EPA is the lead agency for drinking water standards. Şişecam Wyoming is public water system number WY5600634 and is a non-transient non community public water system.

17.7.6 Sewage Permit

Wyoming State Engineers Office issued P10445.0R in 1996. No modifications have been identified.

17.8 SITE MONITORING

Şişecam Wyoming is generally in compliance with all known environmental permits that require monitoring. Critical monitoring for air quality, groundwater containment, drinking water, and other land quality issues are monitored either continuously or on a scheduled routine basis. Federal agencies including US EPA, Bureau of Land Management, Bureau of Reclamation, US Fish and Wildlife, NRC, and State divisions, Department of Environment Quality, Wyoming Game and Fish, State Engineers Office, and Sweetwater County are involved.

17.9 CLOSURE PLANS AND ESTIMATES

17.9.1 Reclamation Plan

The 1975 Reclamation Plan focuses on three general categories:

- Lands with buildings and structures;
  - All surface buildings and structures are to be removed. Foundations removed and used to fill mine openings;
- Roads, travel ways, railroads, etc.;
  - All roadbeds, travel ways, railroad beds and other like developments to be scarified and seeded with perennial grasses and in accordance with regulatory requirements; and
- Tailings ponds and waste areas;
  - Tailings to be left in place as dry lakes. Berms and dams remain in place. Diversion ditched to be constructed around the tailings facilities. Surface of the “dry lakes” to be stabilized with a “standard asphaltic” material to eliminate windblown contamination. Fencing to be erected and maintained for wildlife protection.

Reclamation plan was intended to return lands to their original usage, grazing, and wildlife habitat, as much as possible. Return affective lands to a condition compatible with the surrounding lands.

17.9.2 Reclamation Bond

The 1975 reclamation cost estimate was $351,000.

1979 WYDEQ/LQD issued a permit to develop an acceptable reclamation for the tailings disposal areas.

1987 WYDEQ/LQD issued a revised permit with a more comprehensive and detailed reclamation plan. Twenty tasks were identified and included post-closure reclamation cost.

2020 WYDEQ/LDQ approved permit 257 with a revised reclamation bond of $36,211,000. The 1987 revision served as a template for the over 50 permit revision requests. The 2023 Annual Report revision places the reclamation bond to an estimated $45,994,689 after construction is completed.

17.10 SOCIAL OR COMMUNITY IMPACTS

The social and community impacts of the Şişecam Wyoming operations are a net positive to the area as shown by the Industrial Siting Council approval for the Unit 8 Expansion Project. The trona operations are one of the largest employers in the area and contribute significantly to the tax base. This is a long and established relationship developed over decades.

18.0 CAPITAL AND OPERATING COSTS

Profitable mining and processing have been conducted for over 60 years at Şişecam Wyoming generally under the same mine design assumptions utilized in this reserve estimate. This long history shows a stable and predictable cost structure and consistent revenue. The only exception was 2020 and 2021 where costs and revenues were lower due to the worldwide COVID-19 slowdown. Despite this historic interruption both years were cash positive with 2021 rebounding to near normal levels. Therefore, HPG considers using historical costs for mining the reserves and producing soda ash a reliable basis to forecast future costs. Capital and operating cost estimates are at a minimum at a pre-feasibility level of confidence, having an accuracy level of ±25% and a contingency range not exceeding 15%.

18.1 OPERATING COSTS

With the information provided in previous reviews and this review HPG has been able to examine the last eight years of actual production costs and revenues. For the basis of determining the economic viability of the reserves stated in Section 12.0, HPG has utilized the last five years of financial data provided by Şişecam. Şişecam provided both audited and unaudited financial information including detailed production cost, capital expenditures and revenues.

Based on this historical information, HPG created a long-range financial forecast model for the Şişecam operations. The model includes fixed and variable costs including processing costs, mining costs, sales, general, administrative, interest expenses, royalties, and taxes.

The following operating cost assumptions and parameters were used for this study:

- Based upon past performance and current economics this study assumes similar operating costs to what has been experienced in the past;
- Constant tax and royalty rates;
- Costs are FOB plant;
- Higher costs for two-seam mining; and
- Increased future processing costs in 10 years to account for lower grade ore.

A summary of cash operating costs for Şişecam Wyoming for the LOM based on the HPG model are provided in Table 18.1.

TABLE 18.1
ŞIŞECAM CASH OPERATING COST LOM
$ millions

	OPERATING YEARS (Year 1 - 2025)					
	1-10	11-20	21-30	31-40	41-50	TOTALS
Cost of Goods Sold						
Variable Costs	$ 906	$ 906	$ 906	$ 906	$ 906	$ 4,532
Fixed Cost	$ 1,279	$ 1,399	$ 1,411	$ 1,517	$ 1,517	$ 7,123
Other Cost	$ 263	$ 263	$ 263	$ 263	$ 263	$ 1,317
Total Operating Costs ($ millions)	$ 2,449	$ 2,569	$ 2,581	$ 2,687	$ 2,687	$ 12,973

18.2 CAPITAL COSTS

Şişecam has historically invested in the Big Island property to improve production and reduce costs. In addition to ongoing maintenance capital Şişecam has made major capital expenditures including construction of Unit 6 and Unit 7, addition of the Co-Generation facility and construction of a new ventilation shaft, upgraded mine ventilation fans and shaft heaters. Past business economics have supported these large capital expenditures, which are part of the normal business operation. Capital cost estimates are at a minimum at a pre-feasibility level of confidence, having an accuracy level of ±25% and a contingency range not exceeding 15%.

Şişecam provided HPG with a five-year capital plan which was reviewed along with capital plans from the 2021 review. Based on this information, Şişecam continues to demonstrate a consistent history of investing in both sustaining capital as well as larger expansion and large capital replacement investments. Based upon past performance and current economics this study assumes similar capital expenditures will be made so that the production facilities will be viable for the LOM with the mine producing 4.3 MST of trona ore per year and producing 2.34 MST of soda ash per year.

The following assumptions and parameters were used for this study:

- Because the operation is currently profitable as configured and is predicted to be profitable into the future, no expansions to the facility were considered;
- It is assumed that the historical sustaining capital continues as a conservative estimate;
- The capital necessary to convert to low seam mining equipment is assumed to occur during the normal equipment replacement cycle for the mining production equipment which is part of sustaining capital;
    - An additional capital expenditure for lower equipment has been assumed when the thicker reserves are nearly mined out in approximately 20 years; and
- The capital necessary to upgrade the dissolver ends of Unit 7 and Unit 6 is predicted to occur in ten years.

A summary of capital costs for Şişecam Wyoming for the LOM based on the HPG model are provided in Table 18.1..

TABLE 18.2
ŞIŞECAM CAPITAL COST ESTIMATE LOM
$ millions

	OPERATING YEARS (Year 1 - 2025)					
	1-10	11-20	21-30	31-40	41-50	TOTALS
CAPEX ($ millions)	$ 325	$ 400	$ 320	$ 300	$ 346	$ 1,691

19.0 ECONOMIC ANALYSIS

19.1 METHODOLOGY USED

As previously noted, HPG considers the plus 60-year history of profitably operating the mine and processing units to be a reasonable basis for forecasting future costs and revenues. HPG reviewed eight years of financial information provided by Şişecam. Şişecam provided both audited and unaudited financial information including detailed production cost, capital expenditures and revenues.

The financial model that supports the mineral reserve declaration is a standalone model that calculates annual cashflows based on scheduled ore production, assumed processing recoveries, soda ash sale prices, projected operating and capital costs. The basis for the economic analysis is the previous five years of actual performance adjusted for expected changes in operating costs and necessary capital expenditures to execute the proposed life of mine (LOM) plan.

Capital and operating cost estimates are at a minimum at a pre-feasibility level of confidence, having an accuracy level of ±25% and a contingency range not exceeding 15%.

Because Şişecam and NRP are structured as a pass through entities for income tax purposes no income taxes were included in the economic analysis. The currency used to document the cashflow is US$ based on constant 2024 dollars.

19.1 FINANCIAL MODEL PARAMETERS

Several core assumptions have been employed in constructing this model. First, the analysis is on a cash cost basis with the assumption that viable economics implies positive cash flow. This is a higher standard than other common economic measures such as earnings before interest, taxes, depreciation, and amortization (EBITA). In general, if an operation has positive cash flow its EBITA is more positive. Because of the conservatism built into this cash flow assumption, a minimum 5% rate of return is assumed for viability.

The economic analysis is reported on a 100% project ownership basis. Şişecam Wyoming is owned by Şişecam Chemicals Wyoming LLC ("Şişecam") 51% and by NRP Trona LLC ("NRP") 49%.

This financial analysis includes the following assumptions:

- Constant soda ash production of 2.343 MTPY;
- Constant dry ore soda ash conversion of 1.835 ore to ash;
    - Constant mine production from 4.3 MTPY;
- Increased mining costs for two-seam mining and low seam mining;
    - Two-seam mining costs 30% higher with two-seam tonnage at 25% of production until 2031 when two-seam tonnage rises to 50% of production;
    - Thin seam mining costs 24% higher in approximately 25 years when the +9-foot ore has been depleted;
- No provision for DECA mining was included;
- Plant configuration remains unchanged until upgrades for lower grade ore implement in 10 years;
- Operating costs are based historical costs seen during operations with increased processing costs in approximately 25 years to account for decreasing grade; and
- Revenue is based on a soda ash price of $165/ton FOB plant. Soda ash price is based on published USGS prices which are consistent with historical Sisecam revenues and studies.

Capital Expenditure Assumptions:

- Capital costs are historical expenditures seen during operations and are projected through the LOM plan with adjustments for estimated future changes including:
  - Plant upgrade in ten years to mitigate slugs of low-grade ore due to floor rolls; and
  - Mining equipment changes to allow mining below 9-feet;

Table 19.1 and Table 19.2 illustrate the expected cash flows for the LOM based upon the above assumptions. The model indicates a 20.9% internal rate of return (IRR) and a positive net present value (NPV) of $1,226 million at a 5% discount rate.

TABLE 19.1
ŞIŞECAM **LOM CASHFLOW ANALYSIS**

Sisecam Wyoming LLC
Big Island Mine
Dec-24
Cash Flow Forcast with Varriable Mining Cost

	Investment																	
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
REVENUE																		
Mine Production Trona (000)		4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300
Ore to Ash		1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84
Soda Ash Production (000)		2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343
Gross Revenue ($ millions)		$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387
Cost of Goods Sold																		
Total Cash Costs ($ millions)		$ 242	$ 242	$ 242	$ 242	$ 242	$ 242	$ 250	$ 250	$ 250	$ 250	$ 257	$ 257	$ 257	$ 257	$ 257	$ 257	$ 257
CAPEX ($ millions)		$ 55	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30	$ 130	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30
Invenstment/Pre-Tax Operating Profit ($ millions)	-$ 500.0	$ 90	$ 115	$ 115	$ 115	$ 115	$ 115	$ 107	$ 107	$ 107	$ 107	$ 0	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100
		$ 25.0	Coarse Tailings									Upgrade Disolver Front Ends	$ 100.0					
		NPV5	$ 1,225.7	IRR	20.9%													

Sisecam Wyoming LLC
Big Island Mine
Dec-24
Cash Flow Forcast with Varri

	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058
REVENUE																	
Mine Production Trona (000)	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300
Ore to Ash	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84
Soda Ash Production (000)	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343
Gross Revenue ($ millions)	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387
Cost of Goods Sold																	
Total Cash Costs ($ millions)	$ 257	$ 257	$ 257	$ 257	$ 257	$ 257	$ 257	$ 257	$ 257	$ 257	$ 257	$ 257	$ 269	$ 269	$ 269	$ 269	$ 269
CAPEX ($ millions)	$ 30	$ 30	$ 30	$ 50	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30
Invenstment/Pre-Tax Operating Profit ($ millions)	$ 100	$ 100	$ 100	$ 80	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100	$ 88	$ 88	$ 88	$ 88	$ 88
				$ 20.0	New Mining Equipment												

TABLE 19.2
ŞIŞECAM LOM CASHFLOW ANALYSIS
(CONT.).

Sisecam Wyoming LLC
Big Island Mine
Dec-24
Cash Flow Forcast with Varri

	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	TOTALS
REVENUE																	
Mine Production Trona (000)	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	215,000
Ore to Ash	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84
Soda Ash Production (000)	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	117,166
Gross Revenue ($ millions)	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 387	$ 19,332
Cost of Goods Sold																	
Total Cash Costs ($ millions)	$ 269	$ 269	$ 269	$ 269	$ 269	$ 269	$ 269	$ 269	$ 269	$ 269	$ 269	$ 269	$ 269	$ 269	$ 269	$ 269	$ 12,973
CAPEX ($ millions)	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30	$ 30	$ 76	$ 1,691
Inventment/Pre-Tax Operating Profit ($ millions)	$ 88	$ 88	$ 88	$ 88	$ 88	$ 88	$ 88	$ 88	$ 88	$ 88	$ 88	$ 88	$ 88	$ 88	$ 88	$ 42	$ 4,669
																Mine Closure	$ 46.0

Table 19.1 and Table 19.2 contain "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, which are intended to be covered by the safe harbor created by such sections and other applicable laws. Please refer to the note regarding forward-looking information at the front of the Report. The cashflow is only intended to demonstrate the financial viability of the Project. Investors are cautioned that the above is based on a high-level mine plan and certain assumptions which may differ from Şişecam Wyoming's long-term outlook or actual financial results, including, but not limited to commodity prices, escalation assumptions and other technical inputs. For example, Table 19.1 and Table 19.2 use the price assumptions stated in the table, including a soda ash commodity price assumption of US$165.00/ton. Please be reminded that significant variation of soda ash prices, costs and other key assumptions may require modifications to mine plans, models, and prospects.

19.2 ECONOMIC ANALYSIS SENSITIVITY ANALYSIS

To assess the viability of the Şişecam operation the sensitivity of the operation to changes in soda prices, and operating cost assumptions was tested using a range of 15% above and below the base case values.

Due to the high percentage of fixed costs the economics for large mines and processing facilities the operation is most sensitive to net revenue (soda ash price) and sales volume, followed by variable operating costs, then fixed costs and lastly mining costs.

The sensitivity analysis is shown in Figure 19.1 which illustrates the sensitivity of the 5% NPV to soda ash sales price, production cost, capital cost and two seam mining cost. Soda Ash displays the typical sensitivity of a commodity to pricing which reinforces the importance of being one of the lowest cost producers.

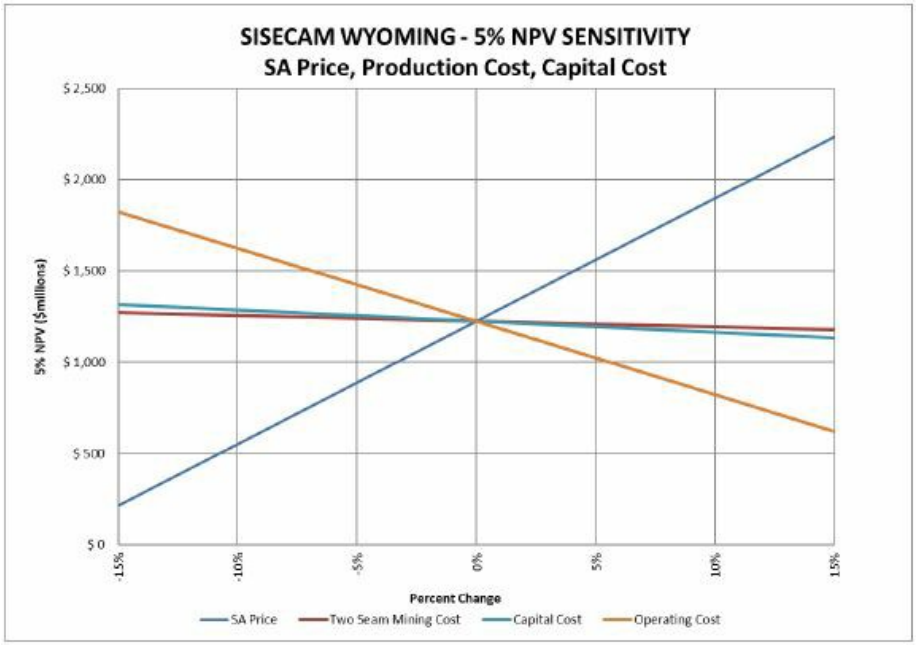


Figure 19.1 5% NPV Sensitivity to Revenue and Production Costs

19.3 ECONOMIC ANALYSIS DISCUSSION

Future mining and refining costs are predicted to increase due to thinning seam thickness and two-seam mining, but the overall impact on costs is not shown to be material with proper mine development sequencing and equipment replacement planning.

Based on this analysis the stated reserves are considered economically extractable.

Şişecam Wyoming faces the following risks to increased costs:

- Two-seam mining's production costs will be higher due to the increased ground support and decreased productivity. An allowance has been included in the cost analysis;
- Ore bed variability and degradation near the margins of the deposit could cause ore grades to decrease which will require some additional processing costs or changes to the processing facilities. Proper short-term planning can determine the best combination of grade and processing costs when mining is near the ore body margins. Continuous miner units can be scheduled to blend some of the ore variability and reduce the impact on the refinery. For the purposes of this analysis the dissolver end of the processing plants is upgraded to handle this ore and processing costs increased to reflect the lower ore grade; and
- External economic drivers are beyond the scope of this study. They include, but are not limited to, labor issues and disputes, increases in royalty rates, change in the supply and demand structure for soda ash, and regulatory and environmental law changes.

20.0 ADJACENT PROPERTIES

The Green River Basin is home to five mining operations, Genesis Westvaco, Genesis Granger, Tata Chemicals, Solvay Chemicals, and Şişecam Wyoming, the subject of this report. Figure 3.2 shows the location of these operations along with their sodium leases.

20.1 GENESIS WESTVACO

Genesis Westvaco was the first trona mine in the basin. The trona bed was discovered in 1938 by oil and gas drilling. Westvaco Chemicals Corporation sunk the first shaft in the basin near there in 1947 to mine Bed 17. The Westvaco operation lies nine miles to the southwest of Şişecam and owns sodium leases adjacent to Şişecam's. In 1948 Food Machinery Corporation (FMC) purchased Westvaco and operated the property continuously until it was sold to Tronox in April of 2015 and then to the current owner Genesis in September of 2017. Since the start, there have been eight shafts developed into Bed 17. Genesis produces dense soda ash from three soda ash plants based on dry trona. Two plants use the Mono process and the third is based on the Sesqui process producing light soda ash. Additionally, Westvaco is a solution mining the old mine workings and processing the resultant liquor in the fourth liquid feed plant based on a decahydrate crystallizer. Genesis also produces bicarbonate and caustic soda. Annual soda ash production exceeds 4.0 MTPY. The operation reported 935 employees and trona production of 4,234,494 tons of trona in 2023.

20.2 GENESIS GRANGER

The Granger mine and processing plant was constructed in 1976 by TexasGulf (TG). The TG mine and refinery is located eleven miles to the west of Şişecam. There are three shafts from the surface to trona Beds 19 and 20. The operation dry mined Bed 20 between 1976 and 2002 then converted to a solution mine in 2005. Elf Aquitaine purchased TexasGulf in 1985 and named the operation TG Soda Ash. The underground mine and processing facility had a production capacity of over 1.2 MTPY. In 1999 the operation was purchased by FMC (now Genesis) and the plant mothballed in 2002. In 2005 the operation restarted using solution liquor from the now flooded mine. Using liquid feed, the plants soda ash capacity was reduced to approximately 400,000 TPY. In 2024 Genesis completed constructing a decahydrate crystallizer front end to the plant which returned the production back to the original nameplate of over 1.2 MTPY.

20.3 TATA CHEMICAL PARTNERS

In 1968 Allied Chemical and General Chemical started a mine in Bed 17 just to the east of the Westvaco Mine. Tata Chemicals purchased the property in 1989. The Tata operation lies 9.5 miles to the southwest of Şişecam. Tata has a production capacity of over 2.5 MTPY produced from dry mined trona and using the mono process in three processing units. The operation reported 547 employees and produced 4,212,389 tons of trona in 2023.

20.4 SOLVAY CHEMICALS

In 1979, Tenneco minerals started the Solvay mine just south of Genesis and Tata also mining Bed 17. The Solvay operation lies fifteen miles to the southwest of Şişecam. In 1992, the Belgium company, Solvay Chemicals purchased the process. Solvay produces soda ash primarily by dry mining but also does some limited solution mining of old workings. The operation reported 462 employees and production of 3,855,573 tons of mined trona in 2023. Soda ash production capacity is over 2.5 MTPY.

21.0 OTHER RELEVANT DATA AND INFORMATION

21.1 WEST END ROOF COLLAPSE AND WATER INFLOW

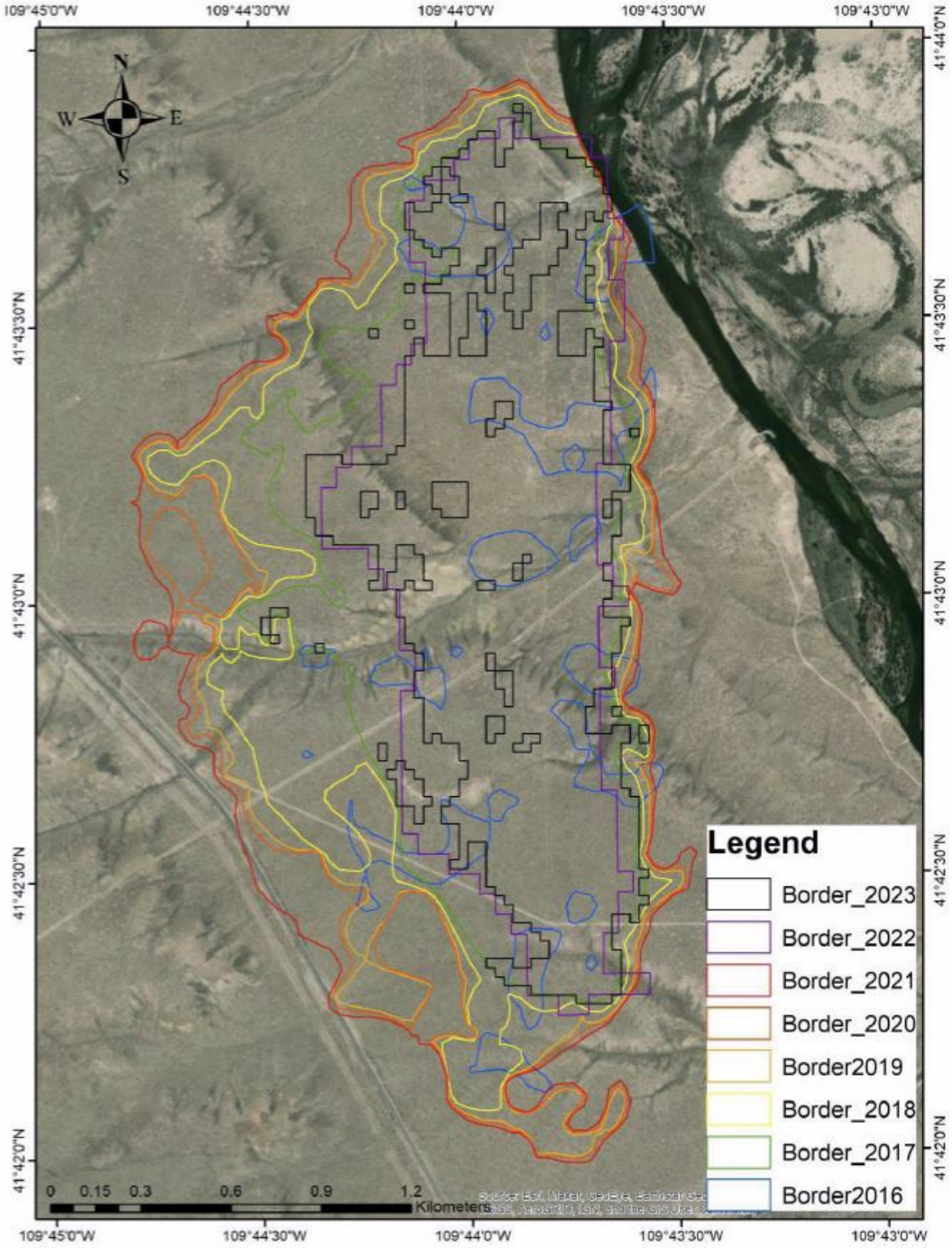
Şişecam provided several recent studies by a hydrologist and geotechnical engineer concerning the Lower Bed West roof collapse and water inflow described in Section 13.2.1. There is a large area of surface subsidence adjacent to the Green River above the LB West underground fall area that is shown in Figure 21.1. The subsidence is likely caused by the roof collapse and failure of the mine pillars in that area. Both reports indicate that the water flow is not from surface waters but from subsurface aquifers based on isotope analysis. Both consultants conclude that due to the depth and multiple aquitards above the mine the probability of a hydraulic connection between the Green River and the mine workings is very low.

The water inflow to the mine ranges from 40 to 140 gpm with the average, in 2024, around 80 gpm. This is a reduction from 2020 which averaged 100 gpm. The water inflow is fresh water which will, over time, dissolve the mine support pillars which are trona. Removal of the support pillars will continue to subside the area. The analysis concludes that at current inflow rates dissolution of all the trona will take 150 years resulting in a very gradual trough-type subsidence basin that is not expected to impact the watershed drainage area. Recent subsidence data shows the subsidence rate to be decreasing. At the current rate of 2 inches of subsidence per year it will take 50 years to reach the expected 8 feet of subsidence. Any large change in flow over an extended period would alter these predictions. Over time the subsidence will impact some of the surface features and infrastructure requiring relatively simple mitigation measures that are well understood.

The likely cause of the seismic event in this area is a large roof fall and pillar failures. Roof falls in the Big Island mine are infrequent but a map of the historic roof falls shows a large cluster of falls in the LB West area. The modulus of elasticity in this area is half of other areas of the mine and likely contributing to the extent of the falls.

The rest of the Big Island Mine with similar geometries remain open, in good condition and have not experienced the large number of roof falls experienced in this area. Other than to increase the size of the barrier pillars there are no plans to modify the mining geometries in other areas of the mine.

As part of the above-mentioned studies extensive subsidence monitoring has been installed over the area, the area is examined regularly, and the inflow water is measured.



Source: Şişecam – Annual Report 2024- 2024.07.15_2023 AR Revised 0.1_Combined_Submittal.pdf

Figure 21.1 West End Subsidence Progression

22.0 INTERPRETATION AND CONCLUSIONS

Approximately 116 MST of the reported recoverable Trona (48%) is dependent upon Şişecam confirming the viability of two-seam mining in the next four years. Most of these tons (approximately 69 MST, 60%) are in areas with thickness over 9-feet.

The November 2024 site visit revealed that since the 2021 report was completed, Şişecam has made significant progress developing the LB North mains and panel entries. Ground conditions were found to be good for the mains entries and production panels confirming the current design. Based on current projections it will be two to four years before Şişecam will verify the viability of two-seam mining. It is possible that two-seam mining may require significant variations from current mining equipment and practices.

Approximately 141 MST of the reported recoverable tonnage is above 9-feet thick and can be mined and processed with the existing equipment, but areas will require ore blending or modification of the processing facilities to handle lower grade ore for short periods. These areas comprise 31 MST of the total reserves. It is anticipated that these plant modifications need to be made within 10-15 years.

The practice of “high grading” the deposit and only mining the thicker material first risks sterilization of the thinner areas if access is lost. Recovery of the reserves less than 9-feet will require changes to the mining and utility equipment, will incur higher mining costs, require access rehabilitation costs and is dependent upon the ability to access these areas through old workings or via extensions of old mains entries as shown in the LOM plan developed for this estimate. As future mining continues, with the current large mining equipment, some loss of portions of the edge of the ore bodies will occur, especially when long production panels are developed. This material makes up 73 MST of the estimated recoverable tonnage. There is some risk that access to these areas 20 years after mining might not be possible.

The roof failure, water inflow and associated subsidence of the Lower Bed West mine area has intrinsic risks to an evaporite mine below a major waterway that must be continuously monitored and evaluated for any changes. These include increased water flow or changes in water type indicating its source could be surface waters. Risks due to high inflow of water can range from higher mining costs to loss of access.

23.0 RECOMMENDATIONS

HPG supports Şişecam's plan to perform additional exploration drilling to improve data density. Additional exploration drilling would result in a higher percentage of the reserve base classified as proven and should better define the trona grades near the drilling locations. Drilling south of the existing lease boundary would help to identify available future reserves and grades. Additionally, it is recommended that Şişecam undertake Bed to Bed drilling from areas in the Upper Bed that overly future LB two-seam mining. Bed to Bed core drilling is significantly less expensive than surface exploration but is limited to two-seam areas.

It is recommended that Şişecam continue to pursue optimization of the refinery facilities to allow efficient processing of the predicted long-term decline in run-of-mine (ROM) trona grades as mining moves to the edges of the ore bodies. A more robust processing facility would allow a more complete recovery of the remaining ore reserves in areas where localized seam rolls and post depositional insoluble infilling have impacted recovery and stopped mining.

It is recommended that Şişecam optimize its ability to blend ore from multiple production areas of the mine to minimize the impact of the lower grade ore from the miners producing from the edge of the deposit or encountering seam rolls. This would also allow improved recovery of the deposit by maintaining a higher average ore grade and minimize sterilization of the thinner or lower grade areas of the deposit.

It is recommended that Şişecam continue close monitoring of the west end water inflows and associated subsidence. HPG would advise more frequent isotope testing of the inflow as well as additional hydrologic studies including source tracing.

24.0 REFERENCES

BAYARI, C. Serdar. 2021, Source of the Momentary Groundwater Inflows in Big Island Mine, Şişecam LLC, Green River Wyoming, April 2021, p.1-57

Boyer, B.W., 1982, Green River laminates: does the playa-lake model really invalidate the stratified-lake model?": Geology, v.10, p. 321-324.

Bradley, W.H., 1964, Geology of Green River Formation and associated Eocene rocks in southwestern Wyoming and adjacent parts of Colorado and Utah," U.S. Geological Survey Professional Paper 496-A, 88 p.

Burnside, M., and Culbertson, W., 1979, Trona deposits in the Green River Basin, Sweetwater, Uinta and Lincoln Counties, Wyoming, U.S. Geological Survey Open File Report 79-737, 10 p.

CFR-17 CFR Part 229 Subpart 229.1300, -- Disclosure by Registrants Engaged in Mining Operations: Code of Federal Regulations, 83 FR 66448, Dec. 26, 2018.

Culbertson, W.C., 1966, Trona in the Wilkins Peak Member of the Green River Formation, southwestern Wyoming: U.S. Geological Survey Professional Paper 550-B, p. 159-164.

Culbertson, W.C., 1971, Stratigraphy of the trona deposits in the Green River Formation, southwest Wyoming: University of Wyoming Contributions to Geology, v. 10, p. 15-23.

Eugster, H.P., and Surdam R.C., 1973, Depositional environmental of the Green River Formation of Wyoming: A Preliminary Report: Geology Society of America Bulletin, v. 84, p. 1115-1120.

Gaines, R.V., Skinner, H.C., Foord, E.E., Mason, B., and Rosenzweig, A., Dana's New Mineralogy, John Wiley and Sons, Inc. (ISBN: 047119310-0)

Garrett, Donald E. Natural Soda Ash: Occurrences, Processing, and Society Use. New Yorek: Van Norstrand Reinhold, 1992. Print. Pages 538, 270.

Leigh, R.T., 1998, Wyoming Trona: An Overview of the Geology, Wyoming State Geological Survey Public Information Circular 40

Roehler, H.W., 1992, Geology of the Eocene Wasatch, Green River, and Bridger (Washakie) Formations, Greater Green River Basin, Wyoming, Utah, and Colorado, U.S. Geological Survey Professional Paper 1506 A-E

Richland Mining Consulting LLC, 2021, Subsidence Potential of the Lowerbed West Area at Big Island Mine, Prepared for Şişecam Wyoming, December 2021

Sullivan, R., 1980, A stratigraphic evaluation of the Eocene rocks of southwestern Wyoming: Geological Survey of Wyoming Report of Investigations no. 20 p. 50. 1985, "Origin of lacustrine rocks of Wilkins Peak Member, Wyoming: American Association of Petroleum Geologist Bulletin, v. 69, no. 6, p. 913-922.

Surdam, R.C., and Wolfbauer, C.A., 1975, Green River Formation, Wyoming: a playa lake complex: Geological Society of America Bulletin, v. 86, p. 335-345.

Wood, G.H., Kehn, T.M., Carter, M.D., and Culbertson, W.C., 1983, Coal Resource Classification System of the U.S. Geological Survey, U.S. Geological Survey Circular 891

24.1 SCANNED FILES LISTING

File/Folder Name	Size
Jefferson_17-DEC-62_Densities_Trona_and_Rock.pdf	323,741
Lee_5-AUG-88_Trona_Reserves_Memo_with_Tables.pdf	2,858,739
Mannion_01-AUG-61__Wyoming Eploration-1960 Progress Report.pdf	3,689,977
Mannion_09-MAY-61_Ore Reserve Calculations.pdf	4,503,326
Mannion_12-MAY-61_Ore_Reserve_Calculations_and_Tables.pdf	7,667,741
Mannion_26-OCT-73_Planning_and_Supplemental_Drilling_Program.pdf	4,825,097
Parratt_17-JUL-73_GR_Trona_Reserves_Trona_District Land Holdings.pdf	1,665,154
Parratt_24-MAR-11_1976_Trona_Development_Drilling.pdf	5,068,341
Wendt_19-DEC-67_Test_Drilling_North_1967_Drilling Program.pdf	3,499,956

24.1 ŞIŞECAM WYOMING DATA SOURCES

Parent Folder	Name
2023	Attachments
	MTI 2-SEAM SITE VISIT REPORT 2023.pdf
	RSI-3362 Final Big Island Mine.pdf
2024	M0138.2202 Lewis 30JAN24 #7.pdf
1-UG MINE MAPS	2025 Budget Mine Plan Fed Royal Red-- 8-1-24 Presentation.dwg
	Lowerbed Mine Map.dwg
	Lowerbed Mine Map_20241004.dwg
	MINEPLAN-HPG-5-3ROOM-A-01OCT24_LOM-1B-11X17 -P.-LB-ALLpdf.pdf
	MINEPLAN-HPG-5-3ROOM-A-01OCT24_LOM-1B-11X17 p-LB-1.pdf
	MINEPLAN-HPG-5-3ROOM-A-01OCT24_LOM-1B-11X17 p-LB-2.pdf
	MINEPLAN-HPG-5-3ROOM-A-01OCT24_LOM-1B-11X17 p-LB-3.pdf
	MINEPLAN-HPG-5-3ROOM-A-01OCT24_LOM-1B-11X17 p-LB-4.pdf
	MINEPLAN-HPG-5-3ROOM-A-01OCT24_LOM-1B-11X17 p-UB-1.pdf
	MINEPLAN-HPG-5-3ROOM-A-01OCT24_LOM-1B-11X17 p-UB-2.pdf
	MINEPLAN-HPG-5-3ROOM-A-01OCT24_LOM-1B-11X17 -P-UB-ALL.pdf
	MINEPLAN-HPG-5-3ROOM-A-01OCT24_LOM-1B-11X17 p-UBE-3.pdf
	MINEPLAN-HPG-5-3ROOM-A-01OCT24_LOM-1B-11X17 p-UBE-4.pdf
	MINEPLAN-HPG-5-3ROOM-A-01OCT24_LOM-1B-11X17 p-UBE-5.pdf
	OneDrive_1_10-4-2024.zip
	OneDrive_1_1-3-2025.zip
	SISECAM SECTION LINES CLOSED_HPG-20230322-1A.dwg
	Upperbed Mine Map.dwg
	Upperbed Mine Map-2024-10-04.dwg
2021 NOV (Closed)	2021.11.18 Notice of Deficiency.pdf
	2021.12.09 NOV.pdf
	20231017 NOV 612-21 DEQ Closure Document.pdf
2022 Stack Testing	2022 Boiler Tuning Report.pdf
	Sisecam Wyoming LLC BOL004 BOL005 CKD006 CKD009 CKD013 CKD015 November 2022 Stack Test Report.pdf
	Sisecam Wyoming LLC ENG007-HET002 CSH004 CSH005 CSH013 May 2022 Stack Test Report.pdf
	Sisecam Wyoming LLC ENG007-HET002 October 2022 Stack Test Report.pdf
2023 NOV and consent decree	2023-0621_AQD_NOV-Sisecam-Wyoming-LLC-6224-23.pdf
	Consent Decree final.pdf
2023 Stack Testing	2023 Boiler Tuning Report.pdf
	Sisecam Wyoming LLC, BOL004 BOL005 CKD006 CKD009 CKD015, November 2023 Stack Test Report .pdf
	Sisecam Wyoming LLC, CKD013, January 2024 Stack Test Report .pdf
	Sisecam Wyoming LLC, CSH009 CSH019 CKD004 CKD008, September 2023 Stack Test Report.pdf
	Sisecam Wyoming LLC, ENG007-HET002 LUD006 LUD007 CSH021, June 2023 Stack Test Report.pdf
	Sisecam Wyoming LLC, ENG007-HET002, July 2023 Stack Test Report.pdf
2023 Turbine replacement	T250 Notification Letter Final.pdf
	T250 Serial Number Notification Letter Final.pdf
2024 Stack Testing	Sisecam Wyoming LLC, ENG007-HET002 CSH008 CSH018 CSH022, July 2024 Stack Test Report.pdf
	Sisecam Wyoming LLC, ENG007-HET002, August 2024 Stack Test Report.pdf
2-Exploration	D02-5.xls
4-TRONA LEASE UPDATES	Federal
	State (WY)
	Sweetwater
	WYO Lease 26971 2.7.2020.pdf
	WYO Lease 26012. 2.7.2020pdf.pdf
	WYO Lease 42570 - 2019.pdf
	WYW190736 ORIGINAL LEASE.pdf
5-10yr Projection trona & Soda Ash	10 Year Production Plan (Hidayet).xlsx
6-Mineral and Surface Ownership Maps	150.005 Figure 1 IE2a D10PP133 Updated June 2021.pdf
	150.010 Figure 2 IE2b D10PP132 Updated June 2021.pdf
7-LB West Water	Geotech
	Subsidence
	Water
8-2023 Financials	2022 Sisecam Wyoming audited financial statements.pdf
	OneDrive_1_11-12-2024.zip
	Reserve Information Request 8 & 11.xlsx
	Sisecam Wyoming AICPA 2023 FS (AVAILABLE FOR DISTRIBUTION).pdf
	Sisecam Wyoming LLC Audit Report (DT Signature) Final.pdf
	TAX05 - 1024 Royalties, Severance and Production Estimates.xlsx
	TAX05 - 1223 Royalties, Severance and Production Estimates.xlsx
	WY Monthly Results DEC-23 v4.xlsx
	WY Monthly Results OCT-24 v2.xlsx
a10-2023 Production data	10 HPG 2023 2024.xlsx
a11-2024 Finacials	OneDrive_1_1-25-2025.zip
	Reserve Information Request 8 & 11.xlsx
	TAX05 - 1224 Royalties, Severance and Production Estimates.xlsx
	WY Monthly Results DEC-24 v2.xlsx
a13-2024 Production Data	10 HPG 2023 2024 (1).xlsx
a15-Capital Plan 2023, 2024 & 10yr	Capital Budget and Five Year Plan 2024-2029.xlsx

Parent Folder	Name
	Capital Budget and Five Year Plan 2024-2029-HPG.xlsx
a17-Tailing Dam Review Reports 2023-2024	2022_Dam_Safety_Inspection_Report_FINAL_signed.pdf
	2023_Dam_Safety_Inspection_Report+Appendices_Final_signed.pdf
a18 Tailing Plan Failure Analysis	2023.05.31_2022 PFMA Report.pdf
a19 DEQ Annual Reports 2022, 2023, 2024	2024.02.20_Final_2022_LQD_Annual_Report_3rdSubmittal.pdf
	2024.07.15_2023 AR Revised 0.1_Combined_Submittal.pdf
a20 TRM to Mine Production Records	2023.01.27_2022 Annual UIC Report.pdf
	2024.01.11_2023 Annual Report_UIC Facility WYS037-043.pdf
a21 TRM Panel, Tailings Pond Plans	Barr Tailings Storage Area Disposal Alternate Study 2-14-23.pdf
	Coarse Tailings Phase 1 Engineering Report_v2.0 (1).pdf
	Sisecam Türkiye- Coarse Tailings Project Presentation.pdf
	SOD Interim Memorandum.pdf
a23-Environmental Violations	2021 NOV (Closed)
	2023 NOV and consent decree
a24-Easments and Property Leases 2023-2024	2024.08.29_Mineral Lease Table.xlsx
	BLM ROW Tracking_Master.xlsx
a25-Air and Water Permits	2023 Turbine replacement
	Title V renewal 2024 (Title five)
a26-Air Quality Testing 2023-2024	2022 Stack Testing
	2023 Stack Testing
	2024 Stack Testing
a27-Mine and Land Permits 2023-2024	List of Permits and Licenses.xlsx
a28-Reclamation and Performance Bonds	0 2024.07_Reclamation Bond Calculation_2023 AR_Rev 0.1.pdf
a29-Ground and Surface Water Monitoring	0 App A Combined_Rev 0.0 & 0.1.pdf
	1 Rivers 2023_Final.pdf
a31-Subsidence Monitoring	Subsidence
a32-Shaft 4 Methane Level History	OneDrive_1_12-17-2024.zip
a34-MSHA Violations 2023-2024	SEC 1300.xlsx
a37-ISO Certificates 2023 & 2024	FM 30272 - 1.pdf
a39-Soda Ash Price-Marketing-Customers	2023_World_Analysis_-_Soda_Ash_-_Report_.pdf
	2024 Global Soda Ash Outlook - Margueritte Morrin.pdf
a40-BLM 5 Year Plan Reports	2023-2027 BLM_Mine_Plan.pdf
a41-BLM Resource Management Plan	WMA comments Jan 14, 2024.pdf
a43-Pending & Active Litigation	Litigation Table (10-31-2024).xlsx
a45-47-Utilities Elec-Gas-Water	~$Reserve Report 2023 2024 updated.xlsx
	OneDrive_1_2-12-2025.zip
	Reserve Report 2023 2024 updated.xlsx
	Reserve Report 2023 2024.xlsx
a48-Rail Cars	Railcar Fleet Info Overview.xlsx
	Railcar Fleet Info Overview-HPG.xlsx
a49 Quality ISO Certs and Processes	Copy of Lab_nov2022 core samples 2.xlsx
	FM 30272 - 001.pdf
	Halal IFANCA 2024.pdf
	ISO14001 (Environmental Management System) information
	Kosher certification 2024.pdf
	LAB 2014 DETERMINATION OF PERCENT VOLATILE Rev 2.docx
	LAB 2020 ANALYSIS OF DAILY ORE SAMPLES Rev 1.pdf
	LAB 2046 DETERMINATION OF HOT WATER INSOLUBLES IN FINAL PRODUCT Rev 1.docx
	LAB 2052 DETERMINATION OF PERCENT SODIUM CARBONATE IN PRODUCT USING THE METTLER TOLEDO Rev. 1.pdf
	NSF Certificate - 44930 Green River 2022.pdf
a50 Two Seam Reports	Geotech
a51 Examples of previous information provided	01-21-001_SISECAM_2021 Tech Report Summary-FINAL-2_SIGNED_sm.pdf
	2024 Report Notes-Examples of Files provided.pdf
	Capital Budget and Five Year Plan 2023- Post August 2022 Outage.xlsx
Attachments	Attacg A3 rooffallCinergrid3mains136.pdf
	Attach A1 rooffallCinergrid12WR20belt.pdf
	Attach A2 rooffallCinergrid22W.pdf
	Attach A4 rooffallCinergrid4mains137.pdf
	Attachment C 8-01-2023 LOWER BED AS-BUILT.pdf
	AttachmentBSagmeter.pdf
	AttachmentD MalekilCGCMMISFinal.pdf
	Cinerreview23reportfinal.pdf
Federal	WYW190736 ORIGINAL LEASE.pdf
Geotech	MTI
	RESPEC
ISO14001 (Environmental Management System) infc	EMS 759799 - 1.pdf
State (WY)	0-25818.doc
	0-42570.doc
	7.1.1.1.38 WY 0-25818.PDF
	WYO Lease 25971 2.7.2020.pdf
	WYO Lease 26012. 2.7.2020pdf.pdf
	WYO Lease 42570 - 2019.pdf
Subsidence	Displacement_Analysis_Sisecam_Wyoming_V.6.3_10.20.2024.pdf
Sweetwater	SisecamLeaseAmend. New Sweetwater Lease 925K.pdf
Title V renewal 2024 (Title five)	3-4-119 (P0038440) - Big Island Completeness Ltr.pdf
	A0015666.pdf
	F000637.pdf
	Renewal App and Follow Up to CO2e Question.msg
Water	2020 LBW Waters Edge.xlsx

25.0 RELIANCE ON INFORMATION PROVIDED BY THE REGISTRANT

HPG has reviewed technical data, reports, and studies produced by other consulting firms, as well as information provided by Şişecam Wyoming, and others. This review was conducted on a reasonableness basis, and HPG has noted herein where such provided information engendered questions. Except for the instances in which we have noted questions or made specific comments regarding the nature of the information, HPG considers the information provided by Şişecam Wyoming as being accurate and suitable for use in this Report. Şişecam Wyoming's staff of professional engineers are considered experts in their field and as such HPG has no reason to doubt the authenticity or substance of the information provided.

Marketing Information - HPG has relied on Şişecam Wyoming representations concerning marketing information and soda ash pricing trends. HPG's reliance on such information and representations applies to Section 11.0, 12.0,16.0, 18.0, 19.0 and the relevant portions of Section 1.0 in this Report.

Legal Matters - HPG has conducted a general review of mineral titles and license documents provided by Şişecam Wyoming. HPG has not verified title or otherwise confirmed the legal status of any of the leases or the license but has relied upon documents and information provided by Şişecam Wyoming's representatives regarding the current status of the leases and license shown. HPG's reliance on such information and representations applies to Section 3.2 and to the relevant portions of Section 1.0 in this Report.

Legal Matters – HPG has relied on Şişecam Wyoming representations concerning any outstanding active adverse legal or liability issues including statutory and regulatory interpretations. HPG's reliance on such information and representations applies to Section 3.2, 17.0 and to the relevant portions of Section 1.0 in this Report.

Governmental Factors – HPG has relied on Şişecam Wyoming representations and information concerning governmental factors relating to taxation, royalties, monitoring requirements and frequency, bonding requirements, violations, and fines. HPG's reliance on such information and representations applies to Section 9.0, 11.0, 12.0, 17.0, 18.0, 19.0 and to the relevant portions of Section 1.0 in this Report.

Environmental Matters - HPG has relied on Şişecam Wyoming representations and documentation regarding environmental permitting and compliance. HPG's reliance on such information and representations applies to Section 17.0 and to the relevant portions of Section 1.0 in this Report.

Environmental Matters – HPG has relied on Şişecam Wyoming representations and documentation concerning surface tailings placement and impoundment structures. HPG's reliance on such information and representations applies to Sections 15.0, 17.0 and to the relevant portions of Section 1.0 in this Report.

Environmental Matters - HPG has relied on Şişecam Wyoming representations and documentation concerning the subsidence and water inflow over the western edge of the mine. HPG's reliance on this information and representations applies to Sections 9.0, 11.0, 12.0, 21.0, and to the relevant portions of Section 1.0 in this Report.