



January 29, 2026

Mr. Albert Chang
Oil Conservation Division
New Mexico Energy, Minerals and Natural Resources Department
1220 S. Saint Francis Drive
Santa Fe, New Mexico 87505

**Re: Stage 2 Abatement Plan (AP) for the Former Reverse Osmosis (RO) Reject Discharge Fields at the HF Sinclair Navajo Refining LLC (HFNSR)
Quarterly Status Report #6 – October through December 2025
Incident #nRM2022559242, GW-028**

Dear Mr. Chang:

HF Sinclair Navajo Refining LLC (HFSNR) is submitting this quarterly status report number 6 for the Stage 2 Abatement Plan (AP) for the Former Reverse Osmosis (RO) Reject Discharge Fields (RO Fields) at the HF Sinclair Navajo Refining LLC (HFSNR) Refinery (Refinery) located in Artesia, New Mexico (**Figure 1**). The Oil Conservation Division (OCD) approved the Stage 2 AP on July 11, 2024. The former RO Fields are located within the northern portion of the active Refinery (**Figure 2**).

This quarterly status covers the period of October through December 2025.

Work Performed During October through December 2025

October 2025:

- Collected plant tissue samples and performed laboratory analyses of constituents of concern (COCs). The samples were not analyzed for any additional parameters. A summary table and a copy of the laboratory report are provided in Attachment A. The COC results from these samples will be compared to future plant tissue samples to evaluate the relative amount of COCs in the plants.
- Developed detailed scope of work for 2026 continued pilot study.
- Submitted 5th quarterly status report with recommendations for 2026 activities.

November 2025:

- Determined that inadequate vegetation was present for harvesting and off-site disposal. The existing vegetation will be plowed into the upper 12 to 14 inches of soil during field preparation in 2026.

December 2025:

- No activities were performed.



Work Planned for January to March 2026

January 2026:

- Complete repairs to the irrigation valves in South RO Field.
- Obtain bids for additional irrigation equipment for the southwest corner of the South RO field to reduce time required to irrigate the entire field.
- Coordinate with the New Mexico Gas Company NMGC regarding installation of a new 6" gas line across the North RO Field in April 2026. This activity will limit field preparation and planting in the North RO Field to the area north of the City of Artesia sanitary sewer line. After the NMGC activities have been completed, the area south of the sanitary sewer line will be prepared and seeded.

February 2026:

- Develop schedule for 2026 activities, as described in the fifth quarterly status report.
- Purchase and install additional irrigation equipment for southwest corner of South RO field.

March 2026:

- Perform kickoff meeting for 2026 activities.
- Depending on weather conditions, begin field preparation for 2026 planting.

Closing

If you have any questions, please feel free to contact Teresa Alba at 575-746-5391 or Mike Holder at 575-308-1115.

Sincerely,

A handwritten signature in blue ink, appearing to read "Case Hinkins".

Case Hinkins
Environmental Manager
HF Sinclair Navajo Refining LLC

c: OCD: C. Smith
 HFSNR: M. Holder, T. Alba

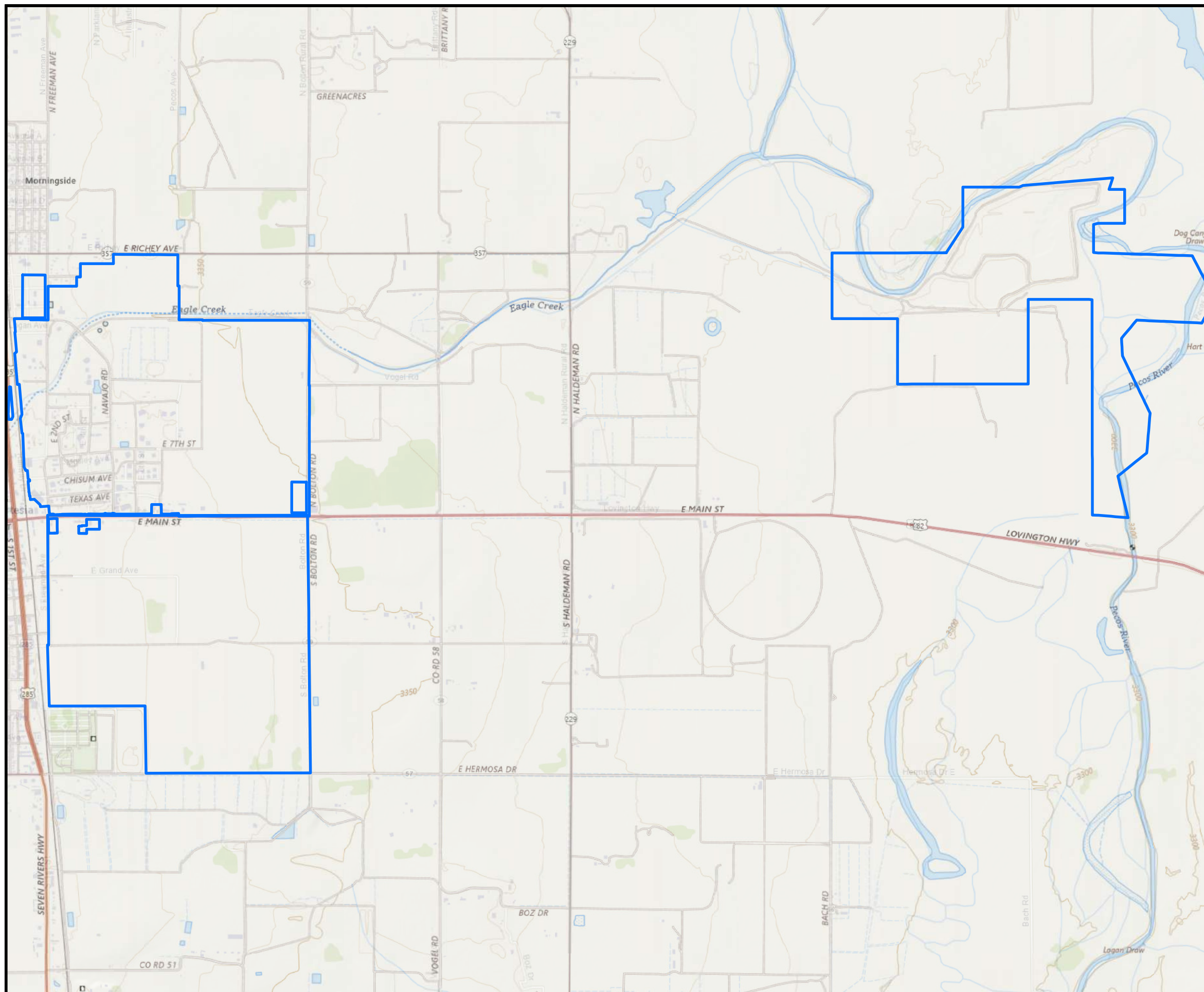
Figures

- 1 – Site Location
- 2 – Location of Former RO Reject Discharge Fields

Attachment A – Plant Tissue Sample Results



FIGURES



Legend

 Property Boundary



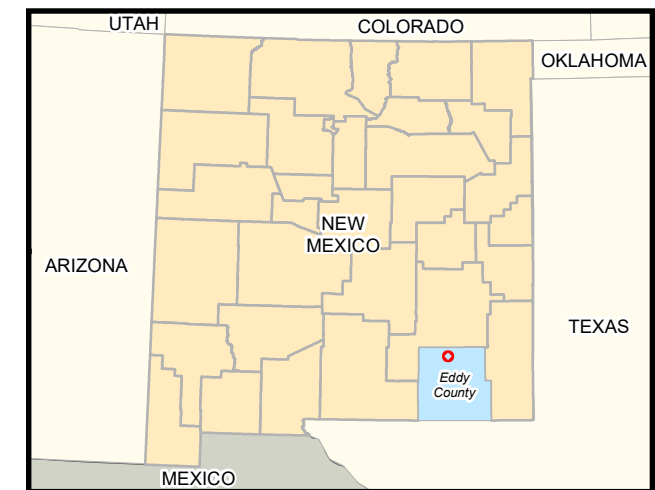
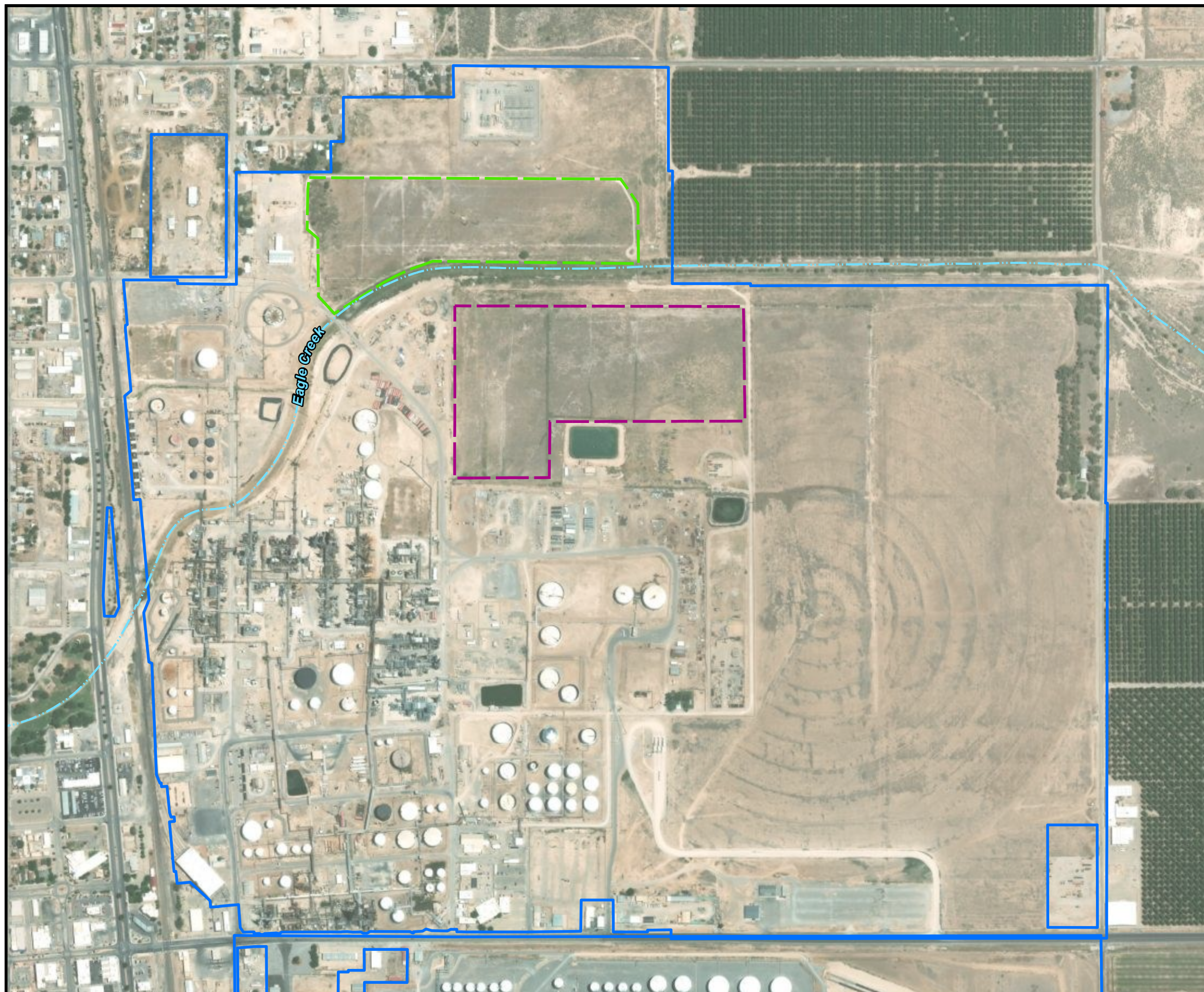
0 1,000 2,000
 Approximate Scale in Feet

Source: USGS 7.5 Minute Series, Artesia and Spring Lake, New Mexico, 2019.





SITE LOCATION
HF SINCLAIR NAVAJO REFINING LLC
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

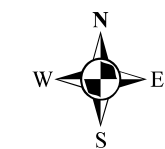


FIGURE
1



Legend

-  Property Boundary
-  North RO Reject Field
-  South RO Reject Field
-  Eagle Creek



0 300 600

Approximate Scale in Feet

**LOCATION OF FORMER RO REJECT
DISCHARGE FIELDS
HF SINCLAIR NAVAJO REFINING LLC
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO**



**FIGURE
2**



ATTACHMENT A

Plant Tissue Sample Results

Table A-1: Summary of 2025 Plant Tissue Sampling

Parameter	Units	Plant Sample Results					
		Wheatgrass (NE)		Indiangrass (SE)		Sudangrass (SW)	
		Result	RL	Result	RL	Result	RL
Chloride	ppm	2,610	43	1,100	43	1,830	43
Fluoride	ppm	338	19	460	19	853	19
Nitrate	ppm	20	10	ND	10	ND	10
Nitrite	ppm	120	10	ND	10	ND	10
Sulfate	ppm	1,200	60	2,390	60	248	60
Arsenic, Total	mg/Kg	ND	3	ND	3	ND	3
Boron, Total	mg/Kg	7	5	8	5	10	5
Iron, Total	mg/Kg	860	10	320	10	110	10
Manganese, Total	mg/Kg	40	1	84	1	62	1
Uranium, Total	mg/Kg	ND	5	ND	5	ND	5

Definitions:

mg/kg = milligrams per kilogram

ND = sample was not detected at the reporting limit shown

NE = North RO Field, East Side

ppm = parts per million

RL = reporting limit

SE = South RO Field, East Side

SW = South RO Field, West Side



Pace Analytical

1673 Terra Avenue Sheridan, WY 82801

ph: (307) 672-8945

Date: 12/30/2025

CLIENT: Tetra Tech TX
Project: HF Refinery
Lab Order: S2511264

CASE NARRATIVE
Report ID: S2511264001

Entire Report Reviewed by:

Ian Scofield, Client Services Manager

Samples NE, SE and SW were received on November 14, 2025.

Samples were analyzed using the methods outlined in the following references:

- U.S.E.P.A. 600/2-78-054 "Field and Laboratory Methods Applicable to Overburden and Mining Soils", 1978
American Society of Agronomy, Number 9, Part 2, 1982
USDA Handbook 60 "Diagnosis and Improvement of Saline and Alkali Soils", 1969
Wyoming Department of Environmental Quality, Land Quality Division, Guideline No. 1, 1984
New Mexico Overburden and Soils Inventory and Handling Guideline, March 1987
State of Utah, Division of Oil, Gas, and Mining: Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining, April 1988
Montana Department of State Lands, Reclamation Division: Soil, Overburden, and Regraded Spoil Guidelines, August 1998
State of Nevada Modified Sobek Procedure
Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition

All Quality Control parameters met the acceptance criteria defined by EPA and Pace Analytical (Formerly Inter-Mountain Laboratories) except as indicated in this case narrative.

Qualifiers by sample

- S2511264-002 - Total (3050) Metals by ICP - 6010C/Iron - Spike Recovery outside accepted recovery limits
S2511264-001 - Saturated Paste Anions/Chloride - Report limit raised due to dilution
S2511264-001 - Saturated Paste Anions/Chloride - Report limit raised due to dilution
S2511264-001 - Saturated Paste Anions/Fluoride - Report limit raised due to dilution
S2511264-001 - Saturated Paste Anions/Fluoride - Report limit raised due to dilution
S2511264-001 - Saturated Paste Anions/Nitrate - Report limit raised due to dilution
S2511264-001 - Saturated Paste Anions/Nitrate - Report limit raised due to dilution
S2511264-001 - Saturated Paste Anions/Nitrite - Report limit raised due to dilution
S2511264-001 - Saturated Paste Anions/Nitrite - Report limit raised due to dilution
S2511264-001 - Saturated Paste Anions/Sulfate - Report limit raised due to dilution
S2511264-001 - Saturated Paste Anions/Sulfate - Report limit raised due to dilution
S2511264-002 - Saturated Paste Anions/Chloride - Report limit raised due to dilution
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S2511264-002 - Saturated Paste Anions/Fluoride - Report limit raised due to dilution
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S2511264-002 - Saturated Paste Anions/Nitrite - Report limit raised due to dilution
S2511264-002 - Saturated Paste Anions/Nitrite - Report limit raised due to dilution
S2511264-002 - Saturated Paste Anions/Sulfate - Report limit raised due to dilution
S2511264-002 - Saturated Paste Anions/Sulfate - Report limit raised due to dilution
S2511264-003 - Saturated Paste Anions/Chloride - Report limit raised due to dilution
S2511264-003 - Saturated Paste Anions/Chloride - Report limit raised due to dilution
S2511264-003 - Saturated Paste Anions/Fluoride - Report limit raised due to dilution
S2511264-003 - Saturated Paste Anions/Fluoride - Report limit raised due to dilution
S2511264-003 - Saturated Paste Anions/Nitrate - Report limit raised due to dilution



Pace Analytical

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ph: (307) 672-8945

Date: 12/30/2025

- S2511264-003 - Saturated Paste Anions/Nitrate - Report limit raised due to dilution
- S2511264-003 - Saturated Paste Anions/Nitrite - Report limit raised due to dilution
- S2511264-003 - Saturated Paste Anions/Nitrite - Report limit raised due to dilution
- S2511264-003 - Saturated Paste Anions/Sulfate - Report limit raised due to dilution
- S2511264-003 - Saturated Paste Anions/Sulfate - Report limit raised due to dilution



Date: 12/30/2025

Definitions

RL Reporting Limit

Qualifiers

- * Value exceeds Maximum Contaminant Level
- A Check MSA specifications
- B Analyte detected in the associated Method Blank
- C Calculated Value
- D Report limit raised due to dilution
- E Value above quantitation range
- G Analyzed at Pace Gillette, WY laboratory
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- L Analyzed by another laboratory
- M Value exceeds Monthly Ave or MCL or is less than LCL
- N Sample analyzed outside of compliance requirements
- ND Not Detected at the Reporting Limit
- O Outside the Range of Dilutions
- P Sample preserved in lab at time of receipt
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte below method detection limit
- X Matrix Effect

Soil Analysis Report

Tetra Tech TX

1500 City west Blvd
Houston, TX 77042

Report ID: S2511264001

Date Reported: 12/30/2025

Work Order: S2511264

Project: HF Refinery

Date Received: 11/14/2025

Lab ID	Sample ID	Chloride	Flouride	Nitrate (N)	Nitrite (N)	Sulfate	Total	Total	Total	Total	Total
		PE	PE	PE	PE	PE	Arsenic	Boron	Iron	Manganese	Uranium
		ppm	ppm	ppm	ppm	ppm	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
S2511264-001	NE	2610	338	20	120	1200	<3	7	860	40	<5
S2511264-002	SE	1100	460	<10	<10	2390	<3	8	320	84	<5
S2511264-003	SW	1830	853	<10	<10	248	<3	10	110	62	<5

These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H2OSol= water soluble, AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate

Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neutral. Pot.= Neutralization Potential

Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage, TOC=Total Organic Carbon

Reviewed by: 
Ian Scofield, Client Services Manager



Pace Analytical

1673 Terra Avenue Sheridan, WY 82801

ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT: Tetra Tech TX
Work Order: S2511264
Project: HF Refinery

Date: 12/30/2025
Report ID: S2511264001

Saturated Paste Anions (ppm)		Sample Type	MBLK	Units: ppm				
BLANK SOIL (11/27/25 22:35)		RunNo: 236855						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual	
Chloride	ND	1						
Fluoride	ND	0.1						
Nitrate	ND	0.1						
Nitrite	ND	0.1						
Sulfate	ND	1						

Saturated Paste Anions (ppm)		Sample Type	LCS	Units: ppm				
LCS 7 (11/27/25 22:24)		RunNo: 236855						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual	
Chloride	5	1	4.76		97.4	50 - 150		
Fluoride	2.3	0.1	2.38		97.4	80 - 120		
Nitrate	4.5	0.1	4.76		94.7	50 - 150		
Nitrite	4.8	0.1	4.76		100	80 - 120		
Sulfate	34	1	35.7		95.6	80 - 120		

Saturated Paste Anions (ppm)		Sample Type	MS	Units: ppm				
S2511264-003ASPK (11/27/25 23:51)		RunNo: 236855						
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual	
Chloride	4030	43.1	2280	1830	96.3	80 - 120	D	
Fluoride	1810	19.0	1140	853	84.2	80 - 120	D	
Nitrate	2180	10.0	2280	ND	95.7	80 - 120	D	
Nitrite	2310	10.0	2280	ND	102	80 - 120	D	
Sulfate	16700	60.1	17100	248	96.4	80 - 120	D	

Saturated Paste Anions (ppm)		Sample Type	MSD	Units: ppm				
S2511264-003ASPKD (11/28/25 00:02)		RunNo: 236855						
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual	
Chloride	4020	43.1	4030	0.0324	96.3	20	D	
Fluoride	1810	19.0	1810	0.0554	84.1	20	D	
Nitrate	2180	10.0	2180	0.117	95.6	20	D	
Nitrite	2310	10.0	2310	0.0130	102	20	D	
Sulfate	16700	60.1	16700	0.0954	96.3	20	D	

Saturated Paste Anions (ppm)		Sample Type	DUP	Units: ppm				
S2511264-003ADUP (11/27/25 23:29)		RunNo: 236855						
Analyte	Result	RL	Ref Samp	%RPD	%REC	% RPD Limits	Qual	
Chloride	1640	43.1	1830	11.0		20	D	
Fluoride	708	19.0	853	18.7		20	D	
Nitrate	ND	10.0	ND			20	D	
Nitrite	ND	10.0	ND			20	D	
Sulfate	207	60.1	248	18.1		20	D	

S2511264-003ADD (11/27/25 23:40)		RunNo: 236855						
Analyte	Result	RL	Ref Samp	%RPD	%REC	% RPD Limits	Qual	
Chloride	1640	43.1	1830	11.0		20	D	
Fluoride	708	19.0	853	18.7		20	D	
Nitrate	ND	10.0	ND			20	D	
Nitrite	ND	10.0	ND			20	D	



Pace Analytical

1673 Terra Avenue Sheridan, WY 82801

ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT: Tetra Tech TX
Work Order: S2511264
Project: HF Refinery

Date: 12/30/2025
Report ID: S2511264001

Saturated Paste Anions (ppm)		Sample Type	DUP	Units: ppm			
S2511264-003ADD (11/27/25 23:40)		RunNo: 236855					
Analyte		Result	RL	Ref Samp	%RPD	%REC	% RPD Limits Qual
Sulfate		207	60.1	248	18.2		20 D

Total (3050) Metals by ICP - 6010C		Sample Type	MBLK	Units: mg/Kg			
MB-23733 (12/03/25 04:15)		RunNo: 236945		PrepDate: 12/01/25 6:45	BatchID: 23733		
Analyte		Result	RL	Spike	Ref Samp	%REC	% Rec Limits Qual
Arsenic		ND	3				
Boron		ND	5				
Manganese		ND	1				
Uranium		ND	5				

MB-23733 (12/03/25 15:42)		RunNo: 236986		PrepDate: 12/01/25 6:45	BatchID: 23733		
Analyte		Result	RL	Spike	Ref Samp	%REC	% Rec Limits Qual
Iron		ND	10				

Total (3050) Metals by ICP - 6010C		Sample Type	LCS	Units: mg/Kg			
LCS-23733 (12/03/25 04:23)		RunNo: 236945		PrepDate: 12/01/25 6:45	BatchID: 23733		
Analyte		Result	RL	Spike	Ref Samp	%REC	% Rec Limits Qual
Arsenic		45	3	50		90.1	80 - 120
Boron		111	5	125		88.9	80 - 120
Manganese		51	1	50		101	80 - 120
Uranium		51	5	50		101	80 - 120

LCS-23733 (12/03/25 15:44)		RunNo: 236986		PrepDate: 12/01/25 6:45	BatchID: 23733		
Analyte		Result	RL	Spike	Ref Samp	%REC	% Rec Limits Qual
Iron		130	10	125		103	80 - 120

Total (3050) Metals by ICP - 6010C		Sample Type	MS	Units: mg/Kg			
S2511264-002AS (12/03/25 04:43)		RunNo: 236945		PrepDate: 12/01/25 6:45	BatchID: 23733		
Analyte		Result	RL	Spike	Ref Samp	%REC	% Rec Limits Qual
Arsenic		43	3	50	ND	85.8	75 - 125
Boron		106	5	125	8	78.6	75 - 125
Manganese		130	1	50	84	92.2	75 - 125
Uranium		47	5	50	ND	94.3	75 - 125

S2511264-002AS (12/03/25 16:02)		RunNo: 236986		PrepDate: 12/01/25 6:45	BatchID: 23733		
Analyte		Result	RL	Spike	Ref Samp	%REC	% Rec Limits Qual
Iron		330	10	125	320	4.82	75 - 125 S

Total (3050) Metals by ICP - 6010C		Sample Type	MSD	Units: mg/Kg			
S2511264-002ASD (12/03/25 04:45)		RunNo: 236945		PrepDate: 12/01/25 6:45	BatchID: 23733		
Analyte		Result	RL	Conc	%RPD	%REC	% RPD Limits Qual
Arsenic		43	3	43	0.828	86.5	20
Boron		110	5	106	3.44	81.6	20
Manganese		130	1	130	0.380	91.2	20
Uranium		47	5	47	0.441	94.7	20

S2511264-002AMSD (12/03/25 16:05)		RunNo: 236986		PrepDate: 12/01/25 6:45	BatchID: 23733		
Analyte		Result	RL	Conc	%RPD	%REC	% RPD Limits Qual
Iron		320	10	330	0.659	3.12	20 S



Pace Analytical

1673 Terra Avenue Sheridan, WY 82801

ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT: Tetra Tech TX

Date: 12/30/2025

Work Order: S2511264

Report ID: S2511264001

Project: HF Refinery

Total (3050) Metals by ICP - 6010C

Sample Type **DUP**

Units: mg/Kg

S2511264-001AD (12/03/25 04:33)	RunNo: 236945	PrepDate: 12/01/25 6:45	BatchID: 23733
Analyte	Result	RL	Ref Samp %RPD %REC % RPD Limits Qual

Arsenic	ND	3	ND	20
Boron	6	5	7 11.2	20
Manganese	41	1	40 0.842	20
Uranium	ND	5	ND	20

S2511264-001AD (12/03/25 15:58)	RunNo: 236986	PrepDate: 12/01/25 6:45	BatchID: 23733
Analyte	Result	RL	Ref Samp %RPD %REC % RPD Limits Qual

Iron	960	10	860 10.5	20
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DC#_Title: ENV-FRM-SHRT-0175 v00_Condition Upon Receipt Form Soils

Effective Date: 10/6/2022

Survey Meter # Model 12SA S/N 136491
Thermometer SN# 220622431

Condition Upon Receipt Soils (Attach to COC)

Sample Receipt

1 Number of ice chests/packages received: 1
Note as "OTC" if samples are received over the counter, unpackaged

2 Were the samples received intact? (no broken bottles, leaks, etc.) Yes No N/A

3 Were the sample custody seals intact? Yes No ~~N/A~~

4 Is the COC properly completed, legible, and signed? Yes No ES 11/14/25

5 Emission rate of samples for radiochemical analyses < 0.5mR/hr? Yes No N/A

6 COC Number (If applicable): _____

7 Does the workorder contain organics? Yes No N/A

If Yes: Temps Observed (°C):							
Temps Corrected (°C):							

Received on ice? Yes No

Received in holding? Yes No

Received in method prescribed containers? Yes No

8 Do the number of samples agree with the COC? Yes No N/A

Sample Verification, Labeling & Distribution

1 Were all requested analyses understood and appropriate? Yes No

2 Did the sample labels correspond with the COC information? Yes No

3 Specially requested detection limits (RLs) assigned? Yes No N/A

4 Have rush or project due dates been checked and accepted? Yes No N/A

5 Do samples require subcontracted analyses? Yes No

If "Yes", which type of subcontracting is required? **General** **Customer-Specified** **Certified**

Sample Receipt, Verification, Login, Labeling & Distribution completed by (initials): DS/DS
Set ID: 82511264

Discrepancy Documentation (use back of sheet for notes on discrepancies)

Any items listed above with a response of "No" or do not meet specifications must be resolved.

Person Contacted: _____ Method of Contact: ___ Phone: _____

Initiated By: _____ Date/Time: _____ Email: _____

Problem: Samples rec'd later than anticipated, will not

Resolution: be able to meet 10 day TAT request.

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/oecd/contact-us>

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

CONDITIONS

Action 547974

CONDITIONS

Operator: HF Sinclair Navajo Refining LLC ATTN: GENERAL COUNSEL Dallas, TX 75201	OGRID: 15694
	Action Number: 547974
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
shanna.smith	Proceed with 2026 Recommendations set forth in report.	2/3/2026
shanna.smith	Submit the next quarterly update in April 2026.	2/3/2026
shanna.smith	Clarify in next quarterly report if Work Planned per month (Jan-Mar) was performed. i.e Were irrigation valves in South RO Field repaired in January?	2/3/2026