



COLORADO
Division of Reclamation,
Mining and Safety
Department of Natural Resources

September 2, 2021

Ms. Angela Bellantoni, Ph.D.
Permits and Licenses Specialist
Pioneer Sand Company, Inc.
630 Plaza Drive, Suite 150
Highlands Ranch, CO 80129

**RE: Adequacy Review No. 2; Technical Revision (TR-2); Pioneer Farm,
Permit No. M-2000-080**

Dear Ms. Bellantoni,

On August 17, 2021, the Division of Reclamation, Mining and Safety (Division) received a request for Technical Revision (TR-2) to update and clarify the mining plan map, mining and reclamation plans to reflect the current conditions at the Pioneer Farm site, Permit No. M-2000-080. Please be advised that on September 16, 2021, the application for TR-2 may be deemed inadequate and denied unless the following adequacy items are addressed to the Division's satisfaction. On September 1, 2021 the operator responded to the Division's Preliminary Adequacy Review dated August 20, 2021. After review of the responses the Division has additional items that need to be addressed or clarified. Please respond to the adequacy items with a letter summarizing each response, to the numbered items below, in a cover letter titled "Adequacy Review No. 2 Response TR-2, M-2000-080".

1. How many acres are in the affected area boundary? Please show this acreage below the note on the map indicating the mine permit acreage. The affected area boundary is not changing from the originally approved permit application but the area was not clearly stated.
2. Pursuant to Rule 6.2.1(2), the map must be signed and dated by a qualified person.
3. The Division calculated the financial warranty based on the May 2021 inspection and updated information provided in TR-2. The cost summary is attached for review. Please provide comments prior to September 16, 2021.

This concludes the Division's adequacy review no. 2 of your technical revision. The Division reserves the right to further supplement this document with additional adequacy items and/or details as necessary.



The decision date for your application is set for September 16, 2021. However, please allow the Division sufficient time to complete its review by submitting your response no later than five (5) working days prior to the decision date. If additional time is needed to respond, an extension request must be received by our Office by the decision date. If on the decision date, outstanding adequacy items remain, and no extension request has been received, your revision may be denied.

If you need additional information or have any questions, please contact me at Division of Reclamation, Mining and Safety, 1313 Sherman Street, Room 215, Denver, CO 80203, by telephone at **303-866-3567 x8114**, or by email at patrick.lennberg@state.co.us.

Sincerely,

A handwritten signature in blue ink, appearing to read "Patrick Lennberg".

Patrick Lennberg
Environmental Protection Specialist

Attachment: Financial Warranty Cost Summary

cc: Jared Ebert; Division of Reclamation, Mining & Safety

ec: Angela Bellantoni, Ph.D., Pioneer Sand Company, Inc., angela.bellantoni@pioneerco.com

Attachments

COST SUMMARY WORK

Task description: Cost Summary

Site: Pioneer Farm

Permit Action: 2021 Insp

Permit/Job#: M2000080

PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 5/20/2021

County: Arapahoe

Filename: 000

User: JPL

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Grading, Leveling and Erosion Repair 20 acres Active Mining	SITEMAINT ENANCE	1	20.00	\$3,587
002	Finish Grade Affected Land	GRADER	1	24.44	\$3,216
003	Spread Topsoil Over Mine Area 20 acres	SCRAPER1	1	17.95	\$21,295
004	Spread topsoil over scale house area	DOZER	1	4.78	\$808
006	Revegetation	REVEGE	1	5.75	\$26,410
007	Mobilization of Equipment	MOBILIZE	1	3.45	\$7,768
<u>SUBTOTALS:</u>				76.37	\$63,084

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02

Total = \$1,274

Performance bond: 1.05

Total = \$662

Job superintendent: 40.30

Total = \$2,903

Profit: 10.00

Total = \$6,308

TOTAL O & P = \$11,148

CONTRACT AMOUNT (direct + O & P) = \$74,232

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): \$500

Total = \$500

Engineering work and/or contract/bid preparation: 4.25

Total = \$3,155

Reclamation management and/or administration: 5.00

\$3,712

CONTINGENCY: 0.00

Total = \$0

TOTAL INDIRECT COST = \$18,514

TOTAL BOND AMOUNT (direct + indirect) = \$81,598

SITE MAINTENANCE

Task description: Grading, Leveling and Erosion Repair 20 acres Active Mining

Site: Pioneer Farm Permit Action: 2021 Insp Permit/Job#: M2000080

PROJECT IDENTIFICATION

Task #: 001 State: Colorado Abbreviation: None
Date: 5/20/2021 County: Arapahoe Filename: 001
User: JPL

Agency or organization name: DRMS

UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Initial site grading	20.00	Cat D6T XL	20.00	EA	\$179.33	\$3,586.60

Job Hours: 20.00

Total Cost: \$3,586.60

MOTOR GRADER WORK

Task description: Finish Grade Affected Land

Site: Pioneer Farm

Permit Action: 2021 Insp

Permit/Job#: M2000080

PROJECT IDENTIFICATION

Task #: 002

State: Colorado

Abbreviation: None

Date: 5/20/2021

County: Arapahoe

Filename: 002

User: JPL

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 12M

Horsepower: 158

Ripper Attachment: _____

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$47.01	NA
Operating Cost/Hour:	\$37.67	100
Ripper Ownership Cost/Hour:	\$0.00	NA
Ripper Operating Cost/Hour:	\$0.00	
Operator Cost/Hour:	\$46.87	NA
Total Unit Cost/Hour:	\$131.55	
Total Fleet Cost/Hour:	\$131.55	

MATERIAL QUANTITIES

Total Area to be graded or ripped: 40.00 acres

Source of estimated acreage: TR2

HOURLY PRODUCTION

Average Grader Speed:	<u>1.50</u>	mph
Selected Application:	<u>Finish grading (0-2.5 mph) - 1.5</u>	
Selected Blade Angle:	<u>0</u>	degrees
Effective Blade Length:	<u>12.00</u>	feet
Width of blade overlap per pass:	<u>2.00</u>	feet
Net grading or ripping width per pass:	<u>10.00</u>	feet
Unadjusted Hourly Unit Production:	<u>1.8182</u>	acres/hour

Job Condition Correction Factors

Site Altitude: 5790 feet

Altitude Adj:	<u>1.00</u>	Source
Job Efficiency:	<u>0.90</u>	(CAT HB)
Net Correction:	<u>0.9000</u>	(1sh/d, fav.)
		multiplier

Adjusted Hourly Unit Production: 1.6364 acres/Hour

Adjusted Hourly Fleet Production: **1.6364** acres/Hour

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **24.44** Hours

Unit cost: \$80.39 per acre Total job cost: **\$3,216**

SCRAPER TEAM WORKTask description: Spread Topsoil Over Mine Area 20 acresSite: Pioneer FarmPermit Action: 2021 InspPermit/Job#: M2000080**PROJECT IDENTIFICATION**Task #: 003State: ColoradoAbbreviation: NoneDate: 5/20/2021County: ArapahoeFilename: 003User: JPLAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 627G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D6T XL
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 12M
-Water Truck:	Water Tanker, 5,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
% Utilization-machine:	100	NA	100	NA	50	50
Ownership cost/hour:	\$188.81	NA	\$64.38	NA	\$47.01	\$33.45
Operating cost/hour:	\$169.82	NA	\$64.62	NA	\$18.84	\$20.98
% Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	NA	\$0.00	\$0.00
Operator cost/hour:	\$47.07	NA	\$40.04	NA	\$46.87	\$38.91
Unit Subtotals:	\$405.70	NA	\$169.04	NA	\$112.72	\$93.34
Number of Units:	2	0	1	0	1	1
Group Subtotals:	Work: \$811.40		Support: \$169.04		Maint: \$206.06	

Total work team cost/hour: \$1,186.50**MATERIAL QUANTITIES**Initial volume: 16,200

CCY

Swell factor: 1.000Loose volume: 16,200

LCY

Source of estimated volume: 6" over 20 acresSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>15.70</u>	LCY
Material description:	<u>Top Soil</u>	Heaped Volume:	<u>22.00</u>	LCY
Rated Payload:	<u>52,800 pounds</u>	Average Volume:	<u>18.85</u>	LCY
Payload Capacity:	<u>33.00 LCY</u>	Adjusted Capacity:	<u>18.85</u>	LCY

Cycle Time:

Scraper Loading Time: 0.90 Minutes
 Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

Site Altitude: 5790 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	400.00	0.00	3.00	3.00	2824	0.32

Haul Time: 0.32 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	400.00	0.00	3.00	3.00	2874	0.26

Return Time: 0.26 minutesTotal Scraper team cycle time: 2.08 minutesAdjusted for job conditions: 902.63 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 902.63 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 902.63 LCY/HourUnadjusted unit production/hour: 1,087.50 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 17.95 HoursUnit cost: \$1.314 /LCYTotal job cost: \$21,295

BULLDOZER WORKTask description: Spread topsoil over scale house areaSite: Pioneer FarmPermit Action: 2021 InspPermit/Job#: M2000080**PROJECT IDENTIFICATION**Task #: 004State: ColoradoAbbreviation: NoneDate: 5/20/2021County: ArapahoeFilename: 004User: JPLAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D6T XLHorsepower: 185Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$64.38	NA
Operating Cost/Hour:	\$64.62	100
Ripper own.		
Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$40.04	NA

Total unit Cost/Hour: \$169.04Total Fleet Cost/Hour: **\$169.04****MATERIAL QUANTITIES**Initial Volume: 800Swell factor: 1.000Loose volume: **800 LCY**Source of estimated volume: Estimate 1 acre 6-inchesSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 150 feetUnadjusted hourly production: 212.5 LCY/hrMaterials consistency description: Partly consolidated stockpile 1.1Average push gradient: 0 %Average site altitude: 5,790 feetMaterial weight: 1,600 lbs/LCYWeight description: Top Soil**Job Condition Correction Factor**Operator Skill: 0.750Source
(AVG.)

Material consistency:	1.100	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7877

Adjusted unit
production: 167.39 LCY/hr
Adjusted fleet
production: **167.39** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$1.010/LCY

Total job time: **4.78** Hours
Total job cost: **\$808**

REVEGETATION WORKTask description: RevegetationSite: Pioneer FarmPermit Action: 2021 InspPermit/Job#: M2000080**PROJECT IDENTIFICATION**Task #: 006State: ColoradoAbbreviation: NoneDate: 5/20/2021County: ArapahoeFilename: 006User: JPLAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
			Total Fertilizer Materials Cost/Acre	\$0.00

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

TILLING

Description	Cost /Acre
Chisel plowing {DMG}	\$96.50
Weed control spraying (MEANS 31 31 16.13 3100)	\$290.40
Total Tilling Cost/Acre	\$386.90

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Wheat, Winter - Tam 107	60.00	55.10	\$16.50
Totals Seed Mix	60.00	55.10	\$16.50

Application

Description	Cost /Acre
Drill Seeding (DRMS Survey Cost)	\$232.00

Total Seed Application Cost/Acre	\$232.00
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MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description	Cost /Acre
	\$
Total Mulch Application Cost/Acre	\$0.00

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
Totals Nursery Stock Cost / Acre					\$0.00

JOB TIME AND COST

No. of Acres:	40	Cost /Acre:	\$635.40
Estimated Failure Rate:	10%	Cost /Acre*:	\$248.50
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$25,416.00
Reseeding Job Cost:	\$994.00
Total Job Cost:	\$26,410
Job Hours:	5.75

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Mobilization of Equipment**Site: **Pioneer Farm**Permit Action: **2021 Insp**Permit/Job#: **M2000080****PROJECT IDENTIFICATION**Task #: **007**State: **Colorado**Abbreviation: **None**Date: **5/20/2021**County: **Arapahoe**Filename: **007**User: **JPL**Agency or organization name: **DRMS****EQUIPMENT TRANSPORT RIG COST**Shift basis: **1 per day**Cost Data Source: **CRG Data**Truck Tractor Description: **GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED,
400 HP (2ND HALF, 2006)**Truck Trailer Description: **GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT
TRAILER (25T, 50T, AND 100T)****Cost Breakdown:**

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$21.28	\$37.94	\$47.67
Operating Cost/Hour:	\$26.55	\$50.48	\$56.21
Operator Cost/Hour:	\$20.54	\$20.54	\$20.54
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$68.37	\$132.49	\$147.95

NON ROADABLE EQUIPMENT:

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Cat D6T XL	23.25	\$64.38	\$68.37	1	\$132.75	\$68.37	\$1,000.00
CAT 12M	16.01	\$47.01	\$68.37	1	\$115.38	\$68.37	\$250.00
Cat 627G w/push-pull	43.48	\$188.81	\$132.49	2	\$642.60	\$264.98	\$500.00
Drill/Broadcast Seeder with Tractor	25.00	\$7.98	\$68.37	2	\$152.70	\$136.74	\$500.00

Subtotals: **\$1,043.43** **\$538.46** **\$2,250.00****ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 3/4 T.	\$12.93	1	\$12.93	\$12.93
Fuel Tanker, 4x2, 170 HP	\$29.70	1	\$29.70	\$29.70

Subtotals: **\$42.63** **\$42.63**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>AURORA</u>	
Total one-way travel distance:	<u>20.00</u>	miles
Average Travel Speed:	<u>55.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$7,737.33</u>
** two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$31.00</u>
** one round trip, no haul rig:	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.36</u>	<u>0.36</u>
Return Time (Hours):	<u>0.36</u>	<u>0.36</u>
Loading Time (Hours):	<u>0.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>0.50</u>	<u>NA</u>
Subtotals:	<u>1.73</u>	<u>0.73</u>

JOB TIME AND COST

Total job time:	<u>3.45</u>	Hours
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Total job cost:	<u>\$7,768</u>
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