

STATE OF COLORADO

DIVISION OF RECLAMATION, MINING AND SAFETY

Department of Natural Resources

1313 Sherman St., Room 215
Denver, Colorado 80203
Phone: (303) 866-3567
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John W. Hickenlooper
Governor

Mike King
Executive Director

Loretta Pineda
Director

August 5, 2013

Mr. Robert Warneke
Natural Soda, Inc.
3200 CR 31
Rifle, CO 81650

Re: Rock School Lease Experimental Nahcolite Mine, Permit No. M-1999-051, Financial Warranty Increase, Revision No. SI-1

Dear Mr. Warneke:

On August 5, 2013 the Division of Reclamation, Mining and Safety (DRMS) increased the current Financial Warranty for this permit to \$119,349.14, in accordance with Rule 4.2.1 of the Rules and Regulations. This is an increase of \$76,486.14.

The Division ordered amendment of the current Financial Warranty or submittal of a new Financial Warranty reflecting the increase is required within 60 days from the date of this letter. If you wish to submit a different type of Financial Warranty, please contact me so I can send you the applicable form.

If you have any questions regarding the financial warranty increase please contact me at the Grand Junction DRMS Office at (970) 241-2042.

Sincerely,

Travis Marshall
Environmental Protection Specialist

ec: Russ Means, DRMS
Barbara Coria, DRMS

cc: Paul Daggett
BLM - White River Field Office
220 East Market Street
Meeker, CO 81641

COST SUMMARY WORK

Task description: _____

Site: Rock School Lease Experimental Nahcolite Mine Permit Action: SI-01 Permit/Job#: M1999051

PROJECT IDENTIFICATION

Task #: 001 State: Colorado Abbreviation: None
Date: 8/5/2013 County: Rio Blanco Filename: M051-001
User: THM

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Plug and Abandon Water Monitoring wells	BOREHOLE	1	40.00	\$75,211.91
02a	Backfill monitoring well pads and well pad access roads	EXCAVATE	1	18.33	\$2,854.00
03a	Re-grade monitoring well pads and well pad access road	DOZER	1	19.15	\$3,293.93
04a	Spread topsoil over re-graded well pads and well pad access	DOZER	1	6.49	\$1,115.72
05a	Revegetate 3.1 acres disturbance	REVEGE	1	8.00	\$4,519.66
06a	Mobilization	MOBILIZE	1	11.24	\$7,731.67
<u>SUBTOTALS:</u>				103.21	\$94,726.89

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02%	Total =	\$1,913.48
Performance bond:	1.05%	Total =	\$994.63
Job superintendent:	51.61 hrs	Total =	\$3,375.48
Profit:	10.00%	Total =	\$9,472.69
		TOTAL O & P =	\$15,756.28
		CONTRACT AMOUNT (direct + O & P) =	\$110,483.17

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	500.00	Total =	500.00
Engineering work and/or contract/bid preparation:	0.00%	Total =	\$0.00
Reclamation management and/or administration:	5.00%		\$5,524.16

CONTINGENCY: 3.00 Total = \$2,841.81

TOTAL INDIRECT COST = \$24,622.25

TOTAL BOND AMOUNT (direct + indirect) = \$119,349.14

BOREHOLE SEALING WORK

Task description: Plug and Abandon Water Monitoring wells

Rock School Lease
Site: Experimental Nahcolite Mine

Permit Action:
SI-01

Permit/Job#: M1999051

PROJECT IDENTIFICATION

Task #: 01A
Date: 8/1/2013
User: THM

State: Colorado
County: Rio Blanco

Abbreviation: None
Filename: 01a

Agency or organization name: DRMS

UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
MWD-1	Portland cement grout - 6 in. (labor, equip, materials)	6"	1731	1,731.00	LF	\$10.92	\$18,903.73
MWU-2	Portland cement grout - 6 in. (labor, equip, materials)	6"	687	687.00	LF	\$10.92	\$7,502.52
MWD-2	Portland cement grout - 6 in. (labor, equip, materials)	6"	1703	1,703.00	LF	\$10.92	\$18,597.95
MWA-2	Portland cement grout - 8 in. (labor, equip, materials)	8"	1200	1,200.00	LF	\$11.88	\$14,252.64
MWB-2	Portland cement grout - 6 in. (labor, equip, materials)	6"	1398	1,398.00	LF	\$10.92	\$15,267.14
AM-2	Portland cement grout - 4 in. (labor, equip, materials)	4"	88	88.00	LF	\$7.82	\$687.93

Job Hours: 40.00

Total Cost: \$75,211.91

HYDRAULIC EXCAVATOR WORK

Task description: Backfill monitoring well pads and well pad access roads

Rock School Lease
Site: Experimental Nahcolite Mine

Permit Action:
SI-01

Permit/Job#: M1999051

PROJECT IDENTIFICATION

Task #: 02A
Date: 8/5/2013
User: THM

State: Colorado
County: Rio Blanco

Abbreviation: None
Filename: M051-02a

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat 336D L 10'-6" Stick
Attachment 1: ROPS Cab

Horsepower: 268
Weight (MT): 29.30
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	<u>\$42.57</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$79.15</u>	<u>100</u>
Operator Cost/Hour:	<u>\$33.94</u>	<u>NA</u>
Total Unit Cost/Hour:	<u>\$155.66</u>	
Total Fleet Cost/Hour:	<u>\$155.66</u>	

MATERIAL QUANTITIES

Initial volume: 5,000 CCY Swell factor: 1.125
Loose volume: 5,625 LCY

Source of estimated volume: Division of Reclamation, Mining & Safety
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Excavator Cycle Time (load bucket, swing loaded, dump bucket, swing empty):

Basic Job Condition Description: AVERAGE
Secondary Job Condition within Basic Description: AVERAGE
Cycle Time Value: 0.321 minutes

Load Bucket Capacity

Rated Capacity: 2.26 LCY (heaped) Bucket Size Class: Medium
Bucket Fill Factor: 0.875 Loose material - 1/2" to 3/4" (85 - 90%) 0.875
Adjusted Capacity: 1.98 LCY

Job Condition Correction Factors

Site Altitude: 6600 feet

Altitude Adj:	<u>1.00</u>	Source
Job Efficiency:	<u>0.83</u>	(CAT HB)
Net Correction:	<u>0.83</u>	(1 shift/day)
		multiplier

Unadjusted Hourly Unit Production: 369.63 LCY/Hour
Adjusted Hourly Unit Production: 306.79 LCY/Hour
Adjusted Hourly Fleet Production: 306.79 LCY/Hour

JOB TIME AND COST

Fleet size: 1 Excavator Total job time: 18.34 Hours

Unit cost: \$0.507 /LCY Total job cost: \$2,854.00

BULLDOZER WORKTask description: Re-grade monitoring well pads and well pad access roadSite: Rock School Lease
Experimental Nahcolite MinePermit Action: SI-01Permit/Job#: M1999051**PROJECT IDENTIFICATION**Task #: 03A
Date: 8/5/2013
User: THMState: Colorado
County: Rio BlancoAbbreviation: None
Filename: M051-03aAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D7R DS Series II LGP
Horsepower: 240
Blade Type: Straight
Attachment: 3-shank ripper
Shift Basis: 1 per day
Data Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$49.24</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$81.07</u>	<u>100</u>
Ripper op. Cost/Hour:	<u>\$4.31</u>	<u>100</u>
Operator Cost/Hour:	<u>\$37.41</u>	<u>NA</u>

Total unit Cost/Hour: \$172.04Total Fleet Cost/Hour: \$172.04**MATERIAL QUANTITIES**Initial Volume: 5,000
Swell factor: 1.125
Loose volume: 5,625 LCYSource of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 75 feet
Unadjusted hourly production: 594.6 LCY/hrMaterials consistency description: Partly consolidated stockpile 1.1Average push gradient: 0 %
Average site altitude: 6,600 feetMaterial weight: 2,550 lbs/LCYWeight description: Earth - Dry packed**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	<u>0.750</u>	<u>(AVG.)</u>
Material consistency:	<u>1.100</u>	<u>(CAT HB)</u>

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:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4941

Adjusted unit production: 293.79 LCY/hr

Adjusted fleet production: 293.79 LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: \$0.586/LCY

Total job time: 19.15 Hours

Total job cost: \$3,293.93

BULLDOZER WORKTask description: Spread topsoil over re-graded well pads and well pad accessSite: Rock School Lease
Experimental Nahcolite MinePermit Action: SI-01Permit/Job#: M1999051PROJECT IDENTIFICATIONTask #: 04A
Date: 8/5/2013
User: THMState: Colorado
County: Rio BlancoAbbreviation: None
Filename: M051-04aAgency or organization name: DRMSHOURLY EQUIPMENT COSTBasic Machine: Cat D7R DS Series II LGP
Horsepower: 240
Blade Type: Straight
Attachment: 3-shank ripper
Shift Basis: 1 per day
Data Source: (CRG)Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$49.24	NA
Operating Cost/Hour:	\$81.07	100
Ripper op. Cost/Hour:	\$4.31	100
Operator Cost/Hour:	\$37.41	NA

Total unit Cost/Hour: \$172.04Total Fleet Cost/Hour: \$172.04MATERIAL QUANTITIESInitial Volume: 2,500
Swell factor: 1.215
Loose volume: 3,038 LCYSource of estimated volume: Division of Reclamation, Mining & SafetySource of estimated swell factor: Cat HandbookHOURLY PRODUCTIONAverage push distance: 75 feet
Unadjusted hourly production: 594.6 LCY/hrMaterials consistency description: Partly consolidated stockpile 1.1Average push gradient: 0 %
Average site altitude: 6,600 feetMaterial weight: 1,600 lbs/LCYWeight description: Top SoilJob Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(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: 468.37 LCY/hr

Adjusted fleet production: 468.37 LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.367/LCY

Total job time: 6.49 Hours
Total job cost: \$1,115.72

REVEGETATION WORKTask description: Revegetate 3.1 acres disturbanceSite: Rock School Lease
Experimental Nahcolite MinePermit Action: SI-01Permit/Job#: M1999051PROJECT IDENTIFICATIONTask #: 05A
Date: 8/5/2013
User: THMState: Colorado
County: Rio BlancoAbbreviation: None
Filename: M051-05aAgency or organization name: DRMSFERTILIZING**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}	\$88.58
Total Tilling Cost/Acre	\$88.58

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Bitterbrush, Antelope	1.00	0.31	\$20.26
Great Basin Wildrye - Magnar	0.50	2.03	\$3.75
Alfalfa - Ladak (inoculated)	1.50	7.23	\$4.68
Russian Wildrye - Vinal	0.50	2.01	\$1.86
Pubescent Wheatgrass - Luna	0.50	1.03	\$1.12
Milk Vetch, Cicer - Monarch	0.50	1.66	\$2.56
Streambank Wheatgrass - Sodar	0.50	1.63	\$2.11
Thickspike Wheatgrass - Critana	0.50	1.77	\$2.59
Western Wheatgrass - Arriba	1.00	2.53	\$3.68
Flax, Lewis Blue	0.20	1.33	\$3.30

Saltbush, Four Wing	1.50	2.07	\$16.10
Globemallow, Scarlet (or copper)	0.20	2.26	\$28.09
Winter Fat	0.50	1.27	\$16.35
Penstemon, Palmer	0.20	4.42	\$6.20
Totals Seed Mix	9.10	31.55	\$112.62

Application

Description	Cost / Acre
Drill seeding (DRMS Cost Data)	\$88.20
Total Seed Application Cost/Acre	\$88.20

MULCHING and MISCELLANEOUS**Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost / Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$265.00	\$530.00
Total Mulch Materials Cost/Acre				\$530.00

Application

Description	Cost / Acre
Crimping, with tractor {DMG survey data}	\$65.89
Power mulcher (MEANS 32 91 13.16 0250)	\$86.68
Total Mulch Application Cost/Acre	\$152.57

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: 3.1 Cost / Acre: \$971.97
 Estimated Failure Rate: 50% Cost / Acre*: \$971.97
 *Selected Replanting Work Items: TILLING, SEEDING, MULCHING

Initial Job Cost: **\$3,013.11**
 Reseeding Job Cost: **\$1,506.55**
 Total Job Cost: **\$4,519.66**
 Job Hours: **8.00**

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: MobilizationSite: Rock School Lease
Experimental Nahcolite MinePermit Action: SI-01Permit/Job#: M1999051**PROJECT IDENTIFICATION**Task #: 06A
Date: 8/5/2013
User: THMState: Colorado
County: Rio BlancoAbbreviation: None
Filename: M051-06aAgency or organization name: DRMS**EQUIPMENT TRANSPORT RIG COST**Shift basis: 1 per day
Cost Data Source: CRG DataTruck 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:	\$16.63	\$18.37	\$22.33
Operating Cost/Hour:	\$44.38	\$46.13	\$50.07
Operator Cost/Hour:	\$27.66	\$27.66	\$27.66
Helper Cost/Hour:	\$0.00	\$25.39	\$25.39
Total Unit Cost/Hour:	\$88.67	\$117.55	\$125.45

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 336D L 10'-6" Stick	32.23	\$42.57	\$117.55	1	\$160.12	\$117.55	\$250.00
Cat D7R DS Series II LGP	34.57	\$44.66	\$117.55	1	\$162.21	\$117.55	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$39.59	\$88.67	1	\$128.26	\$88.67	\$250.00
Power Mulcher (Reinco M90)	6.00	\$7.03	\$88.67	1	\$95.70	\$88.67	\$250.00
Subtotals:					\$546.29	\$412.44	\$1,000.00

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Water Tanker, 2,500 Gal.	\$29.58	1	\$29.58	\$29.58
Light Duty Pickup, 4x4, 3/4 T.	\$15.34	1	\$15.34	\$15.34
Subtotals:			\$44.92	\$44.92

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	GRAND JUNCTION	
Total one-way travel distance:	104.00	miles
Average Travel Speed:	45.00	mph
Total Non-Roadable Mob/Demob Cost *		
** two round trips with haul rig:	\$7,524.04	
Total Roadable Mob/Demob Cost **		
** one round trip, no haul rig:	\$207.63	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	2.31	2.31
Return Time (Hours):	2.31	2.31
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	5.62	4.62

JOB TIME AND COST

Total job time:	11.24	Hours
Total job cost:	\$7,731.67	