NM1-62

Annual Report for 2018

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August 31, 2018

Mr. Jim Griswold, Bureau Chief
Environmental Bureau
Oil Conservation Division
New Mexico Department of Energy,
Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Reference: NM1-62 2018 Annual Report
Sundance West, Inc. Surface Waste Management Facility

Dear Mr. Griswold:
Sundance West Inc. (SWI) is in the process of developing their Surface Waste Management Facility (SWMF) (NM1-62) in Lea County, New Mexico. Gordon Environmental/PSC as Engineer of Record and on behalf of SWI, has compiled the following information in support of the required Annual Report Due by September 1st. This report addresses Permit Condition 2D Annual Report and then addresses the additional Permit Conditions issued on 08/01/2017.

Permit Condition 2D Annual Report required the following:
The operator must submit an annual report to the OCD by September 1st of each year providing the following information for the preceding year:
1) all inspection forms including those for leak detection systems along with analytical results:
- SWI will initiate inspections of the leak detection systems with the completion of the evaporation pond system installation and landfill cell construction scheduled for the first quarter of 2019.

2) hydrogen sulfide monitoring results:
- SWI has scheduled the installation of the hydrogen sulfide monitoring system to be completed in conjunction with the completion of the evaporation pond system installation and landfill cell construction scheduled for the first quarter of 2019.

3) process piping integrity test results:
- At this time, no process piping has been installed at this SWMF.

4) training records:
- At this time, no operations have been implemented therefore no training has been performed.

5) complaint logs and resolutions:
- At this time, no complaints have been received or logged for this SWMF and therefore no resolution of complaints has been required.

and 6) a summary of the nature and amount of any reportable releases:
- At this time, no reportable releases have been identified, therefore no summaries are provided.

The remaining Permit Conditions have been addressed as follows:

Permit Condition 1A. Permitee and Permitted Facility:
OCD issues surface oil field waste management permit NM1-62 to Sundance West, Inc. (operator), 1006 6th Street, Eunice, New Mexico 88231 for the construction, operation, and eventual closure of a commercial facility to be located upon a 320-acre tract in an unincorporated portion of Lea County, New Mexico approximately three miles east of Eunice.

The waste management facility is intended for the permanent disposal of exempt and non-exempt/nonhazardous oil field waste and will include a processing area on 80 acres and a landfill on 180 acres. The remaining 60 acres incorporates associated infrastructure and buffer areas. The landfill will have a waste capacity of approximately 17.4 million cubic yards.

- SWI has completed the construction of six evaporation ponds which are currently being used as interim storage capacity to facilitate the remedial closure of Pond 6 at Sundance Services, Inc. The remaining four evaporation ponds are scheduled for construction during the first quarter of 2019.
- SWI has initiated the construction of the first landfill cell (Cell 1A) and anticipates the completion of construction by the end 2018.
- SWI reports that the design has been initiated for the processing area and anticipates the completion of construction for this area during 2019.

Permit Condition 1B. Scope of Permit:
OCD regulates the disposition of water produced or used in connection with the exploration and production of oil and gas and to direct disposal of that water in a manner which will afford reasonable protection against contamination of fresh water supplies pursuant to authority granted in the Oil & Gas Act (Chapter 70, Article 2 NMSA 1978). Under that Act, OCD also regulates the disposition of nondomestic wastes resulting from exploration, production, or storage of crude oil and natural gas to protect public health and the environment. Similarly, OCD regulates the disposition of nondomestic wastes resulting from the oil field service industry, the transportation of crude oil and natural gas, the treatment of natural gas, and the refinement of crude oil to protect public health and the environment pursuant to jurisdiction and authority granted by the same Act.

This permit does not convey any property rights of any sort or any exclusive privilege to the operator and does not authorize any injury to property or persons, any invasion of other private rights, or any infringement of state, federal, or local laws, rules, or regulations.

- No action required by SWI relative to this condition

Permit Condition 1C. Owner/Operator Commitments:
The operator must ensure all operations are consistent with the terms and conditions of this permit and in conformance with all pertinent rules and regulations under the Oil & Gas Act. Furthermore, the operator shall abide by the approval conditions contained herein, along with all commitments submitted in its permit application of October 11, 2016 including any attachments and/or amendments all of which are incorporated into this Permit by reference.

- SWI confirms that, to the best of their knowledge, their operations to date are consistent with the terms and conditions of Permit NM1-62 and in conformance with all pertinent rules and regulations under the Oil & Gas Act.
- SWI confirms that, to the best of their knowledge, they are abiding by the approval conditions contained within Permit NM1-62, along with all commitments submitted in the October 11, 2016 permit application, including any attachments and/or amendments all of which were incorporated into Permit NM1-62 by reference.

Permit Condition 1D. Modifications:
The operator must notify the OCD in advance of any increase in the land area the facility occupies, any change in the design capacity, any change in the nature of the oil field waste streams, or addition of a new treatment process. As a result, the OCD Director may require a modification in the permit conditions.

- SWI has no current plans to increase in the land area the facility occupies, change the design capacity, change the nature of the oil field waste streams, or add a new treatment process.

Permit Condition 1E. Definitions:
Terms not specifically defined in the permit shall have the same meanings as those in the Oil & Gas Act or the rules adopted pursuant to the Act, as the context requires.

- No compliance issue is addressed by this permit condition

Permit Condition 1F. General Performance Standards:
The operator must operate in accordance with the permit conditions, comply with the Oil & Gas Act and rules issued pursuant to the Act, protect public health and the environment, prevent the waste of oil and gas, and prevent the contamination of fresh waters.

- SWI confirms that, to the best of their knowledge, the SWI SWMF has been operating in accordance with the permit conditions, complying with the Oil & Gas Act and rules issued pursuant to the Act, protecting public health and the environment, preventing the waste of oil and gas, and preventing the contamination of fresh waters.

Permit Condition 1G. Effective Date, Expiration, Renewal, and Penalties for Operating Without a Permit:
This permit is effective once OCD receives adequate financial assurance [see Section 1.H below] and will expire ten years thereafter. If it so desires, the owner/operator may submit an application for renewal to OCD no later than 120 calendar days before the expiration date. If the operator submits such a renewal application before the required date and is in compliance with the existing permit, then that existing permit will not expire until the OCD approves or denies the renewal application. Operating with an expired permit will subject the owner/operator to civil and/or criminal penalties (see Section 70-2-31 NMSA 1978).

- SWI provided adequate evidence of financial assurance prior to the issuance of Permit NM1-62.
- This condition requires no further action at this time.

Permit Condition 1H. Financial Assurance:
The operator must provide financial assurance in a form acceptable to OCD for the waste management facility's estimated closure and post-closure cost. The estimated amount currently required is $1,048,311.00 which includes the cost of closure construction and post-closure operations for Phase I described in the application. On an annual basis, or should unforeseen conditions arise, the operator will update the closure/post-closure estimate and thus the amount of financial assurance.

- Gordon Environmental/PSC has reviewed the financial assurance, provided in the amount of $1,048,611.00 prior to the issuance of Permit NM1-62, and confirms that this amount of financial assurance remains adequate for the current facility operations. A copy of this financial assurance review is included as **Attachment A**.

Permit Condition 2A. Labeling:
The operator must clearly label all tanks, drums, and other containers to identify the contents along with other emergency notification information. The operator may use a tank coding system if it is incorporated into their emergency response planning.

- SWI does not currently have tanks, drums, and other containers currently installed at this SWMF.

Permit Condition 2B. Inspections and Maintenance of Secondary Containment Systems:
The operator must inspect all secondary containment systems and sumps at least monthly to ensure proper operation and to prevent over filling or system failure. The operator must empty all secondary containment systems of any fluids within 48 hours of discovery, notify the OCD, and initiate corrective actions. The operator must keep written records of its inspections and of any fluid analyses. The operator shall maintain and make the documentation available for OCD inspection.

- SWI will schedule the inspection of all secondary containment systems and sumps on a monthly basis to ensure proper operation and to prevent over filling or system failure upon the completion of the evaporation pond system installation anticipated in the first quarter of 2019.
- SWI will implement the monthly inspection of all secondary containment systems and sumps on a monthly basis to ensure proper operation and to prevent over filling or system failure upon the completion of these facilities associated with the landfill cell and process area.

Permit Condition 2C. Release Reporting and Corrective Action for Releases:
The operator must comply with the spill reporting and corrective action provisions of the Oil & Gas Regulations (19.15.29 and 19.15.30 NMAC) as may be amended from time to time.

- SWI confirms that, to the best of their knowledge, the SWI SWMF is in compliance with the spill reporting and corrective action provisions of the Oil & Gas Regulations (19.15.29 and 19.15.30 NMAC).

Permit Condition 2D. Annual Report - Previously Addressed

Permit Condition 3A. Process, Maintenance, and Material Storage Areas:
The operator must pave and curb all process, maintenance, and material storage areas at the facility excluding evaporation ponds, below-grade tanks, and sumps, or incorporate another appropriate spill collection device for these areas approved by the OCD.

- SWI confirms that they will pave and curb all process, maintenance, and material storage areas at the facility or incorporate another appropriate spill collection devices for these areas approved by the OCD, as provided for in the construction plans under development for these areas.

Permit Condition 3B. Above Ground Tanks:
The operator must place above ground tanks on impermeable pads and surround the tanks with lined berms or other impermeable secondary containment system having a capacity of at least one and one-third times the capacity of the largest tank, or the combined volume of any interconnected tanks. This does not apply to tanks containing fresh water.

- SWI confirms that they will place above ground tanks on impermeable pads and surround the tanks with lined berms or other impermeable secondary containment system having a capacity of at least one and one-third times the capacity of the largest tank, or the combined volume of any interconnected tanks, as provided for in the construction plans under development for these areas.

Permit Condition 4A. Waste Streams:
This permit authorizes the operator to handle the RCRA exempt streams. OCD approval must be obtained to receive any waste stream not specified in its application prior to collection, storage, treatment, or disposal.

- SWI is currently handling only RCRA exempt streams.

Permit Condition 4B. Waste Storage:
The operator must store wastes at the facility only in clearly marked storage areas that have been specified in the application except any waste that may be generated during emergency response operations. However, such emergency waste may be stored elsewhere for no more than 72 hours. OCD may approve additional storage on a case-by-case basis.
The operator must not store non-oil field waste generated at the facility by the operator for more than 180 calendar days from the date any container is filled without OCD approval.

- SWI is not currently providing waste storage at this SWMF.

Permit Condition 4C. Class V Wells:
Leach fields and other wastewater disposal systems at OCD-regulated facilities which inject non-hazardous fluids into or above an underground source of drinking water are Underground Injection Control Class V wells pursuant to 20.6.2.5002 NMAC. This permit does not authorize the use of a Class V injection well for the disposal of industrial waste at the facility. Other Class V wells, including wells used only for the injection of domestic wastes, must be permitted by the New Mexico Environment Department.

- SWI SWMF is in compliance with this permit condition.

Permit Condition 5. Below Grade Tanks and Sumps:
Below grade tanks and sumps must have secondary containment systems with leak detection and meet construction and operating requirements of 19.15.17 NMAC.

- SWI confirms that they will provide secondary containment systems with leak detection that meet the construction and operating requirements of 19.15.17 NMAC for any below grade tanks and sumps as depicted in construction plans that will be provided for these areas.

Permit Condition 6A:
Prior to construction activities within the facility, the operator shall determine that all abandoned oil wells within the area are properly plugged in accordance with OCD regulations. If any wells are found to be unplugged or improperly plugged, the operator shall take the appropriate corrective actions.

- SWI completed an evaluation of the site property to confirm that no abandoned oil wells were located in the areas proposed for development.

Permit Condition 6B:
Naturally Occurring Radioactive Material (NORM) waste cannot be accepted at the facility unless in compliance with 19.15.35 NMAC.

- SWI confirms that they have not accepted Naturally Occurring Radioactive Material (NORM) at this facility.

Permit Condition 6C:
At least 30 days prior to the start of construction of the landfill, evaporation ponds, stabilization and solidification area, or process area the operator shall furnish OCD with a complete set of construction drawings including a major milestone schedule for construction. These construction drawings must substantially comply with the engineering design provided with the application and show the location of pond discharge for the purposes of identifying the location of the sacrificial liner. The major milestone schedule shall be updated throughout construction activities.

- SWI provided construction plans for the initial development of six evaporation ponds and Cell 1A of the landfill development on 08/01/2017.
- SWI representatives provided OCD plans for the development of the stabilization and solidification area on 08/13/2017.
- SWI has maintained a major milestone schedule that has been updated throughout the current construction activities. A copy of this schedule is included as **Attachment B**.

Permit Condition 6D:
If disposal wells are to be incorporated into facility operations at a later date, those wells must be separately permitted under provisions of the New Mexico Underground Injection Control program.

- SWI confirms that they have no current plans for the incorporation of disposal wells at this SWMF.

Permit Condition 6E:
Based upon the nature of the waste material and the lack of internal moisture, the operator in its application has stated the production of landfill gas should be negligible and thus no gas control system is required. However, continuous hydrogen sulfide monitors will be located across the facility with a 10 ppm alarm threshold. If OCD determines landfill gases are unreasonably problematic, a gas control system/plan will need to be implemented with OCD approval.

- SWI will complete the installation of continuous hydrogen sulfide monitors located across the facility with a 10 ppm alarm threshold in coordination of the landfill and evaporation pond construction completion scheduled for 2019.

Permit Condition 6F:
Given the significant depth to the uppermost aquifer beneath the facility, a groundwater monitoring program relative to that aquifer (19.15.36.14 B NMAC) is not herein required. However, as provided in the application, the operator shall monitor the vadose zone within a group of ten wells for the presence and quality of water that might emanate from the facility or otherwise appear as the result of stormwater infiltration. The operator shall notify the OCD prior to the installation of vadose zone monitoring wells not already in place. The final number and location of such wells may be modified by conditions encountered in the field. All groundwater samples must also be analyzed by EPA Method 8260 (full list) for volatile organic compounds in addition to those parameters outlined in the application.

- SWI verbally notified the OCD in March 2018 regarding the installation of vadose zone monitoring wells not already in place.
- SWI provided documentation confirming the installation of the vadose monitoring program in a completion report delivered to OCD on 06/28/2018.
- SWI has monitored the vadose zone wells, purging any liquids present, in an effort to sample these wells. To date there has not been sufficient liquids present to properly sample any of the vadose zone wells.

Permit Condition 6G:
The operator has proposed an alternative landfill design which incorporates a geonet layer rather than compacted soil within the leak detection portion (19.15.36.14 C.(3) NMAC), another geonet layer rather than compacted soil within the leachate collection and removal portion (19.15.36.14 C.(5) NMAC), and an evapotranspiration layer for the top landfill cover thereby eliminating the need for a synthetic hydraulic barrier layer beneath the cover and above the waste (19.15.36.14 C.(8) NMAC). The OCD hereby approves these alternatives as they are supported by numeric modeling provided within the application as allowed under 19.15.36.14 C.(9) and appear to provide equivalent protection of fresh water, public health and the environment.

- SWI provided construction plans reflecting this design for the landfill liner in the 08/01/2017 submission.

Permit Condition 6H:
The operator in its application requested an exception to 19.15.36.13 I NMAC with respect to the protection of migratory birds. That exception is hereby granted. Rather than

installing netting over the evaporation ponds, the owner/operator shall remove all oil from the water prior to discharge to the ponds and undertake daily inspections of the ponds for the presence of either oil or birds. Any oil found on the ponds will be removed immediately. If a consistent bird presence is noted, the operator will be required to implement more aggressive protective actions which may include the use of netting or screens.

- SWI has been diligent with their oil management within the evaporation ponds, decanting liquids below the surface from the discharge pond and collecting any oil observed on the evaporation ponds.

We appreciate your review of this 2018 Annual Report for the Sundance West, Inc. Surface Waste Management Facility (NM1-62). Please let us know if you have any questions regarding this information.

Sincerely,
GORDON ENVIRONMENTAL/PSC

Charles W. Fiedler, P.E., LEED, AP
Associate/Senior Practice Leader

cc: Arif Mussani, Sundance Services, Inc.
Hon. Andrew L. Wambsganss, Esq.

Attachments: Attachment A Financial Assurance
Attachment B Schedule

ATTACHMENTS

Attachment A
Financial Assurance

ATTACHMENT A
PHASE I CLOSURE/POST-CLOSURE
COST ESTIMATE SUMMARY
Sundance West

TASK	COST ESTIMATE
1.0 LANDFILL CLOSURE CONSTRUCTION	**$282,648**
2.0 LANDFILL MAINTENANCE	**$448,800**
3.0 ENVIRONMENTAL MONITORING	**$125,400**
4.0 POND AND PROCESSING AREA CLOSURE (see Att. II.4.A.5)	**$129,723**
5.0 PROCESSING AREA MAINTENANCE	**$62,040**
TOTAL COST ESTIMATE	**$1,048,611**

ATTACHMENT II.4.A.2
PHASE I LANDFILL CLOSURE CONSTRUCTION
CLOSURE COST ESTIMATE
Sundance West Landfill (Unit 1 - 13.5 acres ±)

TASK 1.0	Unit Quantity	Unit	Unit Cost	**Total Cost**
1.1 Final Cover Installation				
1.1.1 Install and compact 24" Infiltration (Barrier) Layer	43,516	CY	$3.50	$152,308
1.1.2 Install 12" Erosion (Vegetative) Layer	21,758	CY	$2.50	$54,396
1.1.3 Vegetative Layer Seeding (Class A)	13.5	AC	$1,500.00	$20,250
			Task Subtotal	**$226,953**
1.2 Final Cover CQA				
1.2.1 Inspection and Testing	1	LS	$25,000	$25,000
1.2.2 Certification	1	LS	$5,000	$5,000
			Task Subtotal	**$30,000**
			TASK TOTALS	**$256,953**
			Independent Project Manager and Contract Administration Cost (10% of Task Totals)	$25,695
			TOTAL COST	**$282,648**

Notes:

1. Phase I closure costs are based on contracting with a qualified third party to complete and certify closure. The activities included in this cost estimate are based on current dollars, previous experience with landfills located in arid climates, and current subcontractor costs.
2. Final cover installation costs assume that:
   - ▸ The greatest area requiring final cover is 13.5 acres ± (Unit 1).
   - ▸ 12" of intermediate cover is already installed.
   - ▸ All soils necessary for closure are available on-site.
3. CY = Cubic Yard
   AC = Acre
   LS = Lump Sum
4. Due to the perimeter location there is no final cover "crown", and related geosyntheic layers in Unit 1.

Reviewed 08/31/18

ATTACHMENT A
PHASE I LANDFILL MAINTENANCE
POST-CLOSURE COST ESTIMATE
Sundance West

TASK 2.0	Unit Quantity	Unit	Unit Cost	Total Cost Per Year	Total Cost For 30 Years
2.1 Final Cover Inspection and Reporting					
2.1.1 Inspection	2	events/yr	$1,000	$2,000	$60,000
2.1.2 Recordkeeping and Reporting	2	events/yr	$400	$800	$24,000
			Task Subtotals	**$2,800**	**$84,000**
2.2 Final Cover Maintenance					
2.2.1 Cover Maintenance	1	AC/yr	$1,000	$1,000	$30,000
2.2.2 Vegetation	2	AC/yr	$1,500	$3,000	$90,000
			Task Subtotals	**$4,000**	**$120,000**
2.3 Leachate System					
2.3.1 Inspection/Repair	1	LS	$400	$400	$12,000
2.3.2 Disposal	4	events/yr	$1,000	$4,000	$120,000
			Task Subtotals	**$4,400**	**$132,000**
2.4 Surface Water Management Systems					
2.4.1 Inspection/Repairs	2	events/yr	$600	$1,200	$36,000
			Task Subtotals	**$1,200**	**$36,000**
2.5 Fencing					
2.5.1 Inspection/Repairs	2	events/yr	$600	$1,200	$36,000
			Task Subtotals	**$1,200**	**$36,000**
			TASK TOTALS	**$13,600**	**$408,000**
			Independent Project Manager and Contract Administration Cost (10% of Task Totals)	$1,360	$40,800
			TOTAL COST	**$13,600**	**$448,800**

Notes:

1. Phase I post-closure maintenance costs are based on contracting with a qualified third party to conduct post-closure care maintenance for the landfill. The activities included in this cost estimate are based on current dollars, previous experience with landfills located in arid climates, and current subcontractor costs.
2. AC = Acre
   LS = Lump Sum

Reviewed 08/31/18

ATTACHMENT A
PHASE I ENVIRONMENTAL MONITORING
POST-CLOSURE COST ESTIMATE
Sundance West

TASK 3.0	Unit Quantity	Unit	Unit Cost	Total Cost Per Year	Total Cost
3.1 Landfill Gas Monitoring[3]					
3.1.1 Field Services/Reporting (30 years)	0	events/yr	$0	$0	$0
			Task Subtotal	**$0**	**$0**
3.2 Monitoring Well/Vadose Zone Monitoring					
3.2.1 Field Services/Lab Analysis/Reporting (30 years)	1	events/yr	$2,300	$2,300	$69,000
			Task Subtotal	**$2,300**	**$69,000**
3.3 NPDES Monitoring					
3.3.1 Field Services/Reporting (30 years)	1	LS	$1,500	$1,500	$45,000
			Task Subtotal	**$1,500**	**$45,000**
			TASK TOTALS	**$3,800**	**$114,000**
Independent Project Manager and Contract Administration Cost (10% of Task Totals)				$380	$11,400
			TOTAL COST	**$4,180**	**$125,400**

Notes:

1. Phase I closure costs are based on contracting with a qualified third party to conduct post-closure monitoring for the landfill. The activities included in this cost estimate are based on current dollars, previous experience with landfills located in arid climates, and current subcontractor costs.
2. Assume no water in vadose wells (i.e., sampling and analysis costs not included).
3. Included with Task 3.2.
4. LS = Lump Sum

Reviewed 08/31/18

ATTACHMENT A
PHASE I POND AND PROCESSING AREA CLOSURE CONSTRUCTION
CLOSURE COST ESTIMATE
Sundance West

Task 4.0	Units	Unit Cost	Total (10 acres)	
			Quantity	Cost
4.1 Evaporation Pond				
4.1.1 Liquids Transport/Disposal				
4.1.1.1 Transport Liquid	bbl	$1.75	100	$ 175
4.1.1.2 Disposal Liquids	bbl	$0.95	100	$ 95
4.1.1.3 Remove/Transport Sludge	ton	$6.50	2,000	$ 13,000
4.1.1.4 Disposal Sludge	ton	$15.00	2,000	$ 30,000
4.1.1.5 Liner Removal/Transport	yd^3	$4.00	80	$ 320
4.1.1.6 Disposal Liner	yd^3	$4.25	80	$ 340
			Task Subtotal	**$ 43,930**
4.1.2 Pond Backfill and Contouring				
4.1.2.1 Soil On-site	yd^3	$1.00	0	$ -
4.1.2.2 Place and Compact Soil	yd^3	$3.00	6,000	$ 18,000
			Task Subtotal	**$ 18,000**
4.1.3 Sampling	each	$200	100	$ 20,000
4.1.4 Seeding	acres	$1,200	10	$ 12,000
			Task Subtotal	**$ 32,000**
Pond Closure Subtotal:			**$**	**93,930**
4.2 Site Work				
4.2.1 Tank Removal	Lump Sum		$	7,500
4.2.2 Building Removal	Lump Sum		$	-
4.2.3 Process Equipment Removal	Lump Sum		$	1,000
4.2.4 Earthwork	Lump Sum		$	7,500
Site Work Subtotal:			**$**	**16,000**
4.3 Engineering				
4.3.1 CQA/Certification	Lump Sum		$	8,000
Engineering Subtotal:	Lump Sum		**$**	**8,000**
4.4 Totals				
4.4.1 Subtotal			$	117,930
4.4.2 Adminstration Cost (10%)			$	11,793
Total:			**$**	**129,723**

Notes:

1. Phase I closure costs are based on contracting with a qualified third party to complete and certify closure.
2. Assume 1,000 gallons of residual water in each pond transported up to 50 miles for disposal.
3. Assume 6" of sludge remaining in each pond at closure transported up to 50 miles for disposal.
4. Site Sampling is conducted during the CQA phase.

Reviewed 08/31/18

ATTACHMENT A
PROCESS AREA MAINTENANCE
POST-CLOSURE COST ESTIMATE
Sundance West

TASK 5.0	Unit Quantity	Unit	Unit Cost	Total Cost Per Year	Total Cost For 3 Years
5.1 Surface Inspection and Reporting					
5.1.1 Inspection	2	events/yr	$1,000	$2,000	$6,000
5.1.2 Recordkeeping and Reporting	2	events/yr	$400	$800	$2,400
			Task Subtotals	**$2,800**	**$8,400**
5.2 Surface Maintenance					
5.2.1 Cover Maintenance	1	AC/yr	$1,000	$1,000	$3,000
5.2.2 Vegetation	2	AC/yr	$1,500	$3,000	$9,000
			Task Subtotals	**$4,000**	**$12,000**
5.3 Fencing					
5.3.1 Inspection/Repairs	2	events/yr	$600	$1,200	$3,600
			Task Subtotals	**$1,200**	**$36,000**
			TASK TOTALS	**$8,000**	**$56,400**
			Independent Project Manager and Contract Administration Cost (@ 10%)	$800	$5,640
			TOTAL COST	**$8,000**	**$62,040**

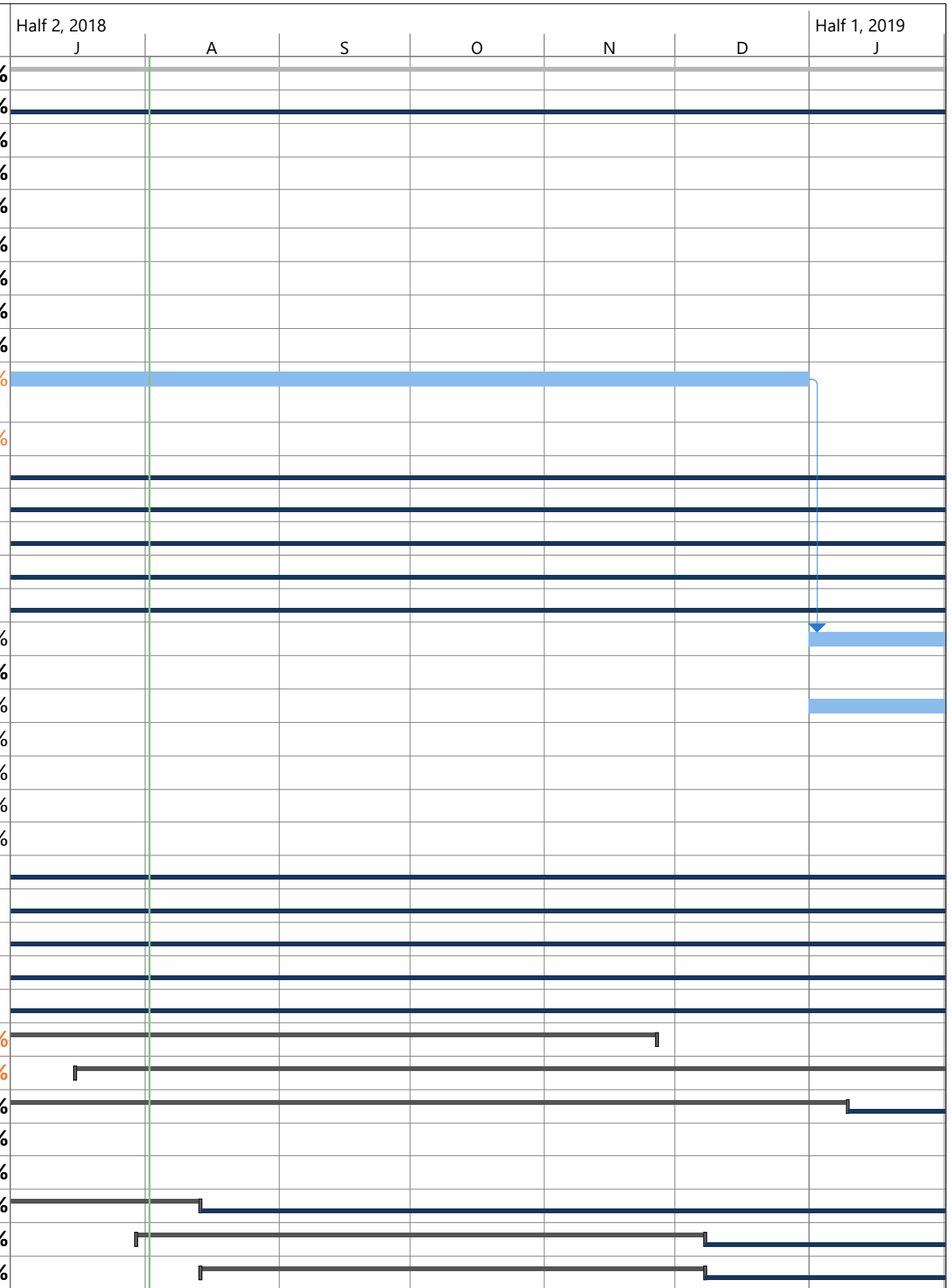
Notes:

1. Phase I post-closure maintenance costs are based on contracting with a qualified third party to conduct post-closure care maintenance for the Processing Area. The activities included in this cost estimate are based on current dollars, previous experience with closures located in arid climates, and current subcontractor costs.
2. AC = Acre
   LS = Lump Sum

Reviewed 08/31/18

Attachment B
Schedule

ID	Task Mode	Task Name	Duration	Start	Finish	% Complete
0		**Sundance & SSI Construction Projects**	**1444 days**	**Wed 6/21/17**	**Sat 12/31/22**	**33%**
1		**Project Management**	**221 days**	**Mon 7/31/17**	**Tue 6/5/18**	**74%**
36		**(LEGACY milestone 1) Install 6 vadose zone wells/initial sampling**	**101 days**	**Thu 8/10/17**	**Thu 12/28/17**	**100%**
46		**(LEGACY) Decommission 125 piezometers/ground water wells**	**190 days**	**Mon 10/9/17**	**Fri 6/29/18**	**100%**
53		**Sub-Phase 1 - (WEST) Evaporation Ponds Development**	**160 days**	**Mon 9/18/17**	**Fri 4/27/18**	**100%**
84		**Install 8 vadose zone monitoring wells**	**62 days**	**Thu 2/15/18**	**Fri 5/11/18**	**100%**
94		**Sub-Phase 2 - (WEST) Evaporator System(s)**	**199 days**	**Tue 9/12/17**	**Fri 6/15/18**	**100%**
111		**Permanent Primary/Secondary Power**	**103 days**	**Fri 11/17/17**	**Tue 4/10/18**	**100%**
119		**Distribution Power**	**5 days**	**Thu 3/29/18**	**Wed 4/4/18**	**100%**
121		**(LEGACY milestone 2) Decommission produced water tanks/berms/sumps**	261 days	Mon 1/1/18	Mon 12/31/18	25%
122		**(LEGACY milestone 5) Construct N/S/E slopes on east landfill**	0 days	Fri 12/31/21	Fri 12/31/21	0%
123		Close east landfill to waste				
124		Construct jet-out system				
125		Construct process (jet-out solids)				
126		Construct mud management (tankers)				
127		Construct gate house/operations office				
128		**(LEGACY milestone 3) Demo public jet-out pits**	260 days	Tue 1/1/19	Mon 12/30/19	0%
129		**(LEGACY milestone 4) Decommission ponds 5 & 6**	**714 days**	**Wed 1/1/20**	**Mon 9/26/22**	**0%**
131		**(LEGACY milestone 3) Demo SSI jet-out pits**	260 days	Tue 1/1/19	Mon 12/30/19	0%
132		Infrastructure	262 days	Fri 12/31/21	Sat 12/31/22	0%
133		Decommission Pond 1	262 days	Fri 12/31/21	Sat 12/31/22	0%
134		Decommission Pond 4	262 days	Fri 12/31/21	Sat 12/31/22	0%
135		**(LEGACY milestone 6) Stabilize/remediate ponds 2, 3, & 9**	260 days	Mon 1/3/22	Fri 12/30/22	0%
136		Decommission treatment plant				
137		Construct mud management (boxes)				
138		Construct oil recovery processing				
139		Site sampling (soils)				
140		Construct final cover/close & seed				
141		~~**SSI East Landfill Clay Liner (Design, Bid, Build)**~~	~~195 days~~	~~Tue 2/27/18~~	~~Mon 11/26/18~~	0%
165		**SSI East Landfill Relocation Phase 1 (Design, Bid, Build)**	**208 days**	**Mon 7/16/18**	**Wed 5/1/19**	**0%**
187		**Sundance West Landfill Cell 1 (Design, Bid, Build)**	**220 days**	**Thu 3/8/18**	**Wed 1/9/19**	**26%**
188		**Task Order approval**	**0 days**	**Thu 3/8/18**	**Thu 3/8/18**	**100%**
189		**Project Manual**	**40 days**	**Thu 3/8/18**	**Wed 5/2/18**	**100%**
195		**Bid Construction**	**73 days**	**Thu 5/3/18**	**Tue 8/14/18**	**94%**
208		**Construction**	**95 days**	**Mon 7/30/18**	**Fri 12/7/18**	**0%**
209		**Earthwork (Substantial 98 days; Final 120 days)**	**84 days**	**Tue 8/14/18**	**Fri 12/7/18**	**0%**



Project: Sundance & SSI Constr
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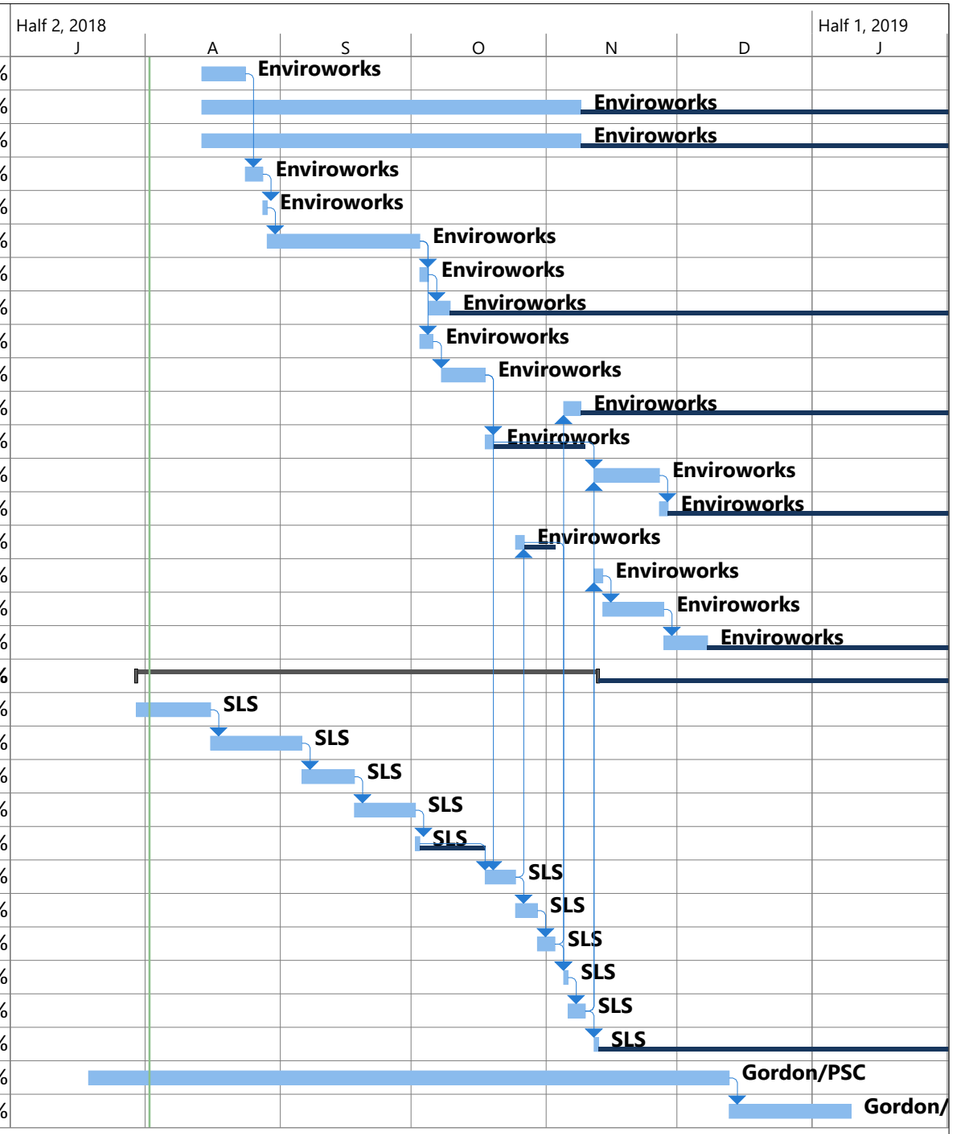
Task	Inactive Task	Manual Summary Rollup	External Milestone	Progress
Split	Inactive Milestone	Manual Summary	Deadline	Manual Progress
Milestone	Inactive Summary	Start-only	Critical	Slack
Summary	Manual Task	Finish-only	Critical Split	
Project Summary	Duration-only	External Tasks	Late	

ID	Task Mode	Task Name	Duration	Start	Finish	% Complete
210		Mobilize	8 days	Tue 8/14/18	Thu 8/23/18	0%
211		SWPPP	63 days	Tue 8/14/18	Thu 11/8/18	0%
212		Surveyor	63 days	Tue 8/14/18	Thu 11/8/18	0%
213		Clear and Grub	2 days	Fri 8/24/18	Mon 8/27/18	0%
214		GCL Pad	1 day	Tue 8/28/18	Tue 8/28/18	0%
215		Landfill Mass Excavation	25 days	Wed 8/29/18	Tue 10/2/18	0%
216		Scarify and Recompact Roadway Subgrade	2 days	Wed 10/3/18	Thu 10/4/18	0%
217		Caliche Roadway	3 days	Fri 10/5/18	Tue 10/9/18	0%
218		Structural Fill	3 days	Wed 10/3/18	Fri 10/5/18	0%
219		Fine Grading and Subgrade Compaction	8 days	Mon 10/8/18	Wed 10/17/18	0%
220		Perforated and Solid Pipe Installation	4 days	Mon 11/5/18	Thu 11/8/18	0%
221		Liner Anchor Trench	2 days	Thu 10/18/18	Fri 10/19/18	0%
222		Protective Soil Layer	11 days	Mon 11/12/18	Mon 11/26/18	0%
223		Plywood Installation	2 days	Tue 11/27/18	Wed 11/28/18	0%
224		Stormwater Flap	2 days	Thu 10/25/18	Fri 10/26/18	0%
225		Liner Protection Berm	2 days	Mon 11/12/18	Tue 11/13/18	0%
226		Cleanout Riser Headwall	10 days	Wed 11/14/18	Tue 11/27/18	0%
227		Demobilization	8 days	Wed 11/28/18	Fri 12/7/18	0%
228		**Geosynthetics (Substantial 90 days; Final 120 days)**	**76 days**	**Mon 7/30/18**	**Mon 11/12/18**	**0%**
229		Submittals	13 days	Mon 7/30/18	Wed 8/15/18	0%
230		Manufacturing of Liner Materials	15 days	Thu 8/16/18	Wed 9/5/18	0%
231		Conformance Testing	8 days	Thu 9/6/18	Mon 9/17/18	0%
232		Ship and Deliver Geosynthetics	10 days	Tue 9/18/18	Mon 10/1/18	0%
233		Mobilization	1 day	Tue 10/2/18	Tue 10/2/18	0%
234		Install GCL and Secondary HDPE Liner	5 days	Thu 10/18/18	Wed 10/24/18	0%
235		Install Leak Detection Layer	3 days	Thu 10/25/18	Mon 10/29/18	0%
236		Install Primary HDPE Liner	4 days	Tue 10/30/18	Fri 11/2/18	0%
237		Install Rain Flap	1 day	Mon 11/5/18	Mon 11/5/18	0%
238		Install Geocomposite/Geotextile	4 days	Tue 11/6/18	Fri 11/9/18	0%
239		Cleanup and Demobilization	1 day	Mon 11/12/18	Mon 11/12/18	0%
240		CM and CQA	21 wks	Thu 7/19/18	Wed 12/12/18	0%
241		Certification Report	4 wks	Thu 12/13/18	Wed 1/9/19	0%



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