

**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CASPER FIELD OFFICE
FINDING OF NO SIGNIFICANT IMPACT**

**Howell Petroleum Corporation
Salt Creek Fieldwide Expansion, 2012 Update
CO₂ Enhanced Oil Recovery (EOR) Project
WY-060-EA12-206**

INTRODUCTION

The Bureau of Land Management (BLM) prepared an Environmental Assessment (EA) (WY-060-EA12-206) which analyzed the effects of continued fieldwide expansion of the Salt Creek Oil Field CO₂ Enhanced Oil Recovery (EOR) Development Project in Natrona County, Wyoming, by Howell Petroleum Corporation (Howell).

The Salt Creek Fieldwide Expansion, 2012 Update EA (2012 Update) (WY060-EA12-206) tiers to and incorporates by reference the information and analysis contained in the following previous Salt Creek NEPA documents, which are located at the BLM Casper Field Office for review:

- CO₂ Enhanced Oil Recovery Project in the Salt Creek Field Phase I (Phase I EA); EA No. WY-060-04-001 (BLM 2003).
- CO₂ Phase II Expansion (Phase II EA); EA No. WY-060-04-053 (BLM 2004).
- Phase III/IV CO₂ Enhanced Recovery Project - Salt Creek Oil Field (Phase III-IV EA); EA No. WY-060-EA06-18 (BLM 2006a).
- Salt Creek Phase V Enhanced Oil Recovery Project (Phase V EA); EA No. WY-060-EA07-006 (BLM 2006b).
- Salt Creek Fieldwide Expansion (Fieldwide Expansion); EA No. WY-060-EA07-067 (BLM 2007).
- Use Attainability Analysis Salt Creek and Powder River, Natrona and Johnson County, Wyoming; (UAA); (RETEC 2004).

BACKGROUND

Phases I – VIII, XV, and XVI

Within Salt Creek Oil Field, oil production has declined steadily from a peak of 85,000 BOPD in the 1920s to approximately 4,000 BOPD prior to CO₂ injection. In an effort to reverse the declining trend of oil production, Howell constructed an extension of the Shute Creek to Bairoil pipeline to deliver up to 250 million cubic feet (mcf) of CO₂ to be used for tertiary recovery operations in the field. Howell introduced state-of-the-art tertiary EOR technology by injecting CO₂ to increase oil production that would otherwise not be recoverable by existing waterflood operations. With the implementation of Phases I and II, oil recovery in Salt Creek Oil Field has increased from 4,000 to 7,500 BOPD.

The locations of Phases I - V (Figure 1.2) were based on factors such as proximity to local communities and populations; geologically representative areas; and existing roads, facilities, and wells. Actual surface disturbances for Phases I through VII and estimated disturbances for Phases XIII, XV and XVI are summarized in Table 1-1.

Reclaimed acreages are determined by monitoring for re-vegetation success. For reclamation to be considered successful the perennial herbaceous canopy cover of the reclaimed flow lines must reach a minimum of 70% of the adjacent native undisturbed canopy cover, as required for the Storm Water Pollution Prevention Plan objectives set by the Wyoming Department of Environmental Quality (WDEQ).

Phases XV will be commissioned in the third quarter of 2012 while Phases VIII and XVI will be commissioned in the third quarter of 2013. Production from these three phases is expected to increase the total CO₂ production to 14,000 BOPD by 2014.

Table 1-1 Salt Creek Previously Analyzed Surface Disturbance Summary (Short-term and Long-term)

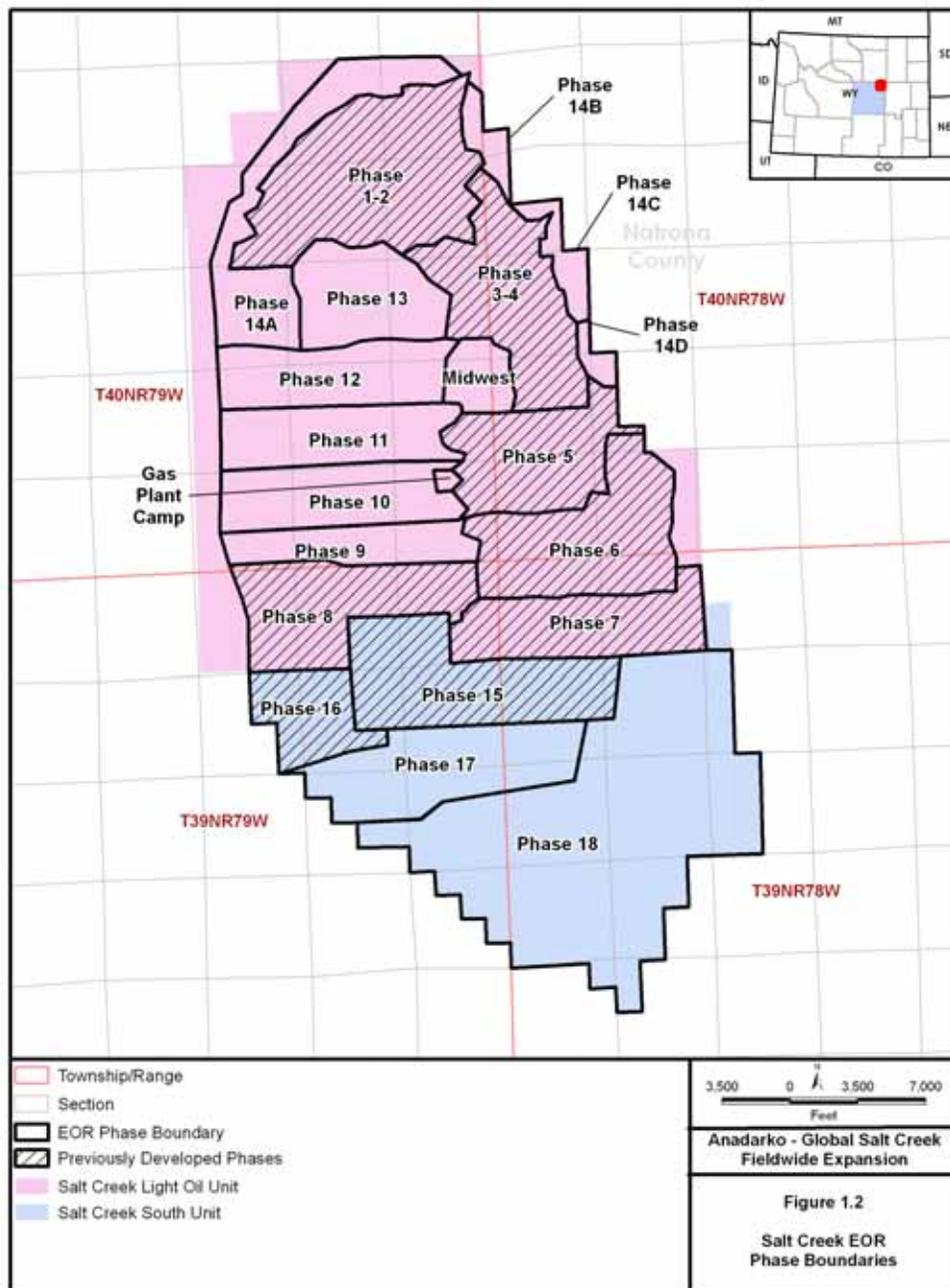
Category	Units	Actual					Estimated		
		Phase I	Phase II	Phase III/IV	Phase V	Phase VI	Phase VII	Phase XV	Phase VIII/XVI
Wells	Quantity	238	180	381	240	264	225	228	131
	Acres	58.2	37.1	137.7	107.6	117.5	80.7	139	79
Headers	Quantity	13	8	16	8	6	5	6	5
	Acres	3.6	2	2.6	5.5	3.1	1.1	3.1	2.6
Flowlines	Acres	130.4	82.2	158.4	59.4	78	73	152.5	93.1
Trunklines	Acres	89.7	24.6	72.4	28	61	25.9	98.9	23.1
Access	Acres	*	1.4	2.7	26.4	4	4.8	5.5	2.9
Power	Acres	6	0	14	4.6	6.1	<0.1	<0.1	0.1
Facilities	Acres	7.1	0	13	17.2	0	0	12.9	21.5
Temporary Use Areas	Acres	11.5	*	23	23	0	0	45.9	45.9
TOTAL		306.5	147.3	423.8	271.7	269.7	185.5	457.8	268.1
Re-claimed Acreage		143	69.2	69.2	0	0	0	0	0
Acres per well		1.3	0.8	1.1	1.1	1.0	0.8	2.0	2.0

Disturbance summary includes short- and long-term, new and existing disturbance.

* - Not specifically calculated

PROPOSED ACTION

Howell is proposing continued fieldwide expansion of the Salt Creek Oil Field CO₂ EOR Development Project in Natrona County, Wyoming, as depicted in Figure 1.2. The 2012 Update would involve continued development and injection of CO₂ into the WC2 and WC1 formations as well as development of the Sundance 2, Sundance 3, Lakota, and Tensleep formations. The 2012 Update would inject CO₂ throughout the Salt Creek Light Oil Unit (SCLOU) and Salt Creek South Unit (SCSU). If approved, implementation of the 2012 Update would begin in 2013 and is projected to extend to at least December, 2020.



Periodic Plans of Development (PODs) would be developed to provide additional detail for proposed actions and to summarize the existing conditions. Each POD would be subject to BLM approval, and additional monitoring of potential impacts including those to wildlife and cultural resources would be considered. A summary of existing disturbance and reclamation success would also be included in the PODs.

Project Overview

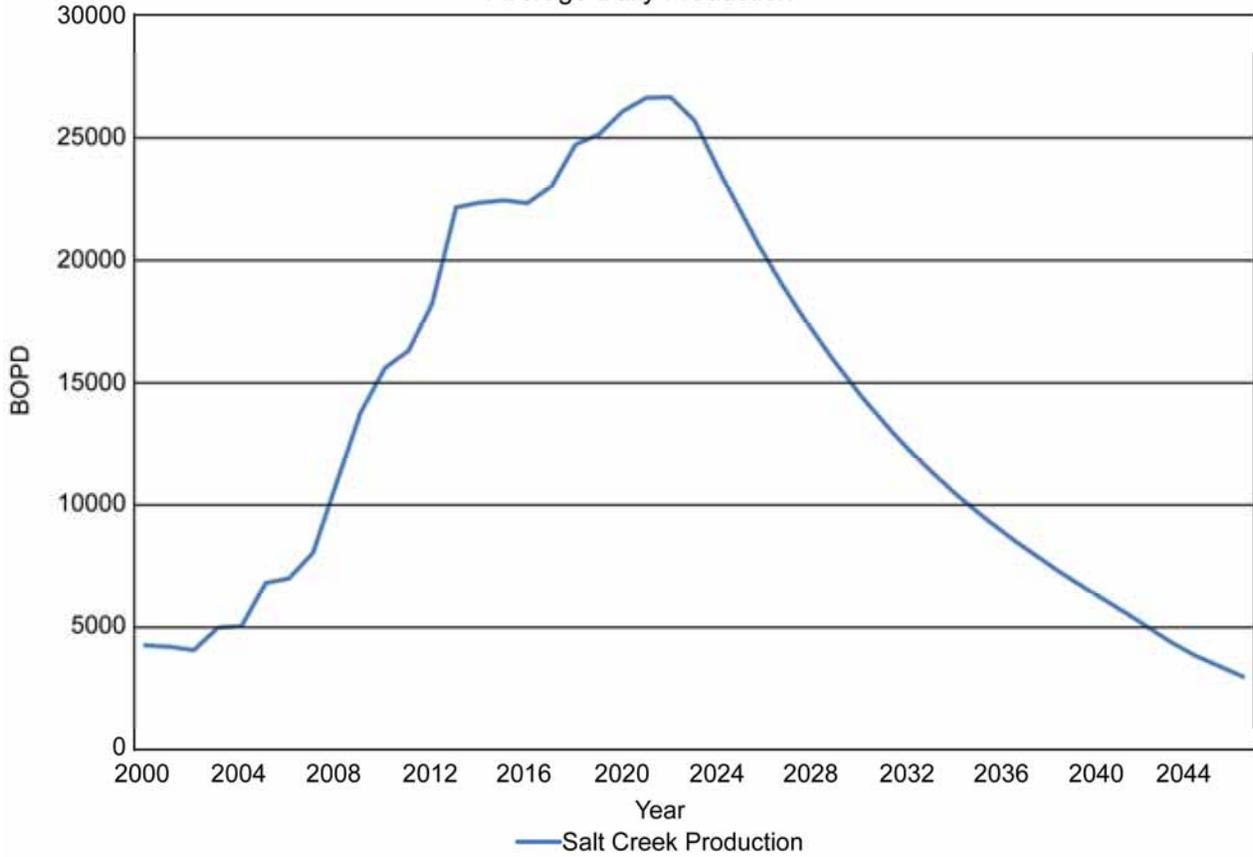
The 2012 Update EA analyzes the continued fieldwide expansion, specifically the 2012 Update, which encompasses approximately 10,197 acres of tertiary EOR development using CO₂ injection. CO₂ EOR involves the alternating injection of CO₂ and water into the reservoir rock to displace liquid hydrocarbons towards production wells where it is withdrawn and further processed. CO₂ produced with the oil would be separated and recycled to the CO₂ injection system for re-injection. The proposed project would be similar to existing waterflood activities; therefore, many of the existing facilities and infrastructure would be used as part of the Proposed Action. Anticipated facilities would include injection and production wells, injection and production pipelines, production test and treating facilities, injection manifold headers, replacement or modification of three existing lease automatic custody transfer (LACT) tank batteries, construction of one new LACT, additional recycle compression stations, and associated electrical lines. Existing wells would be utilized to the extent possible to limit the number of new wells.

The use of CO₂ is being successfully implemented within Salt Creek Oil Field and has resulted in approximately 10,500 BOPD of production attributable to EOR to date. As shown in Figure 2.1, an overview of reservoir modeling results for Salt Creek Oil Field suggests that CO₂ EOR expansion could ultimately increase daily production rates in excess of 20,000 BOPD and increase ultimate oil recovery from the entire field by as much as 200 MMBO, extending the life of the field 30 to 40 years.

CO₂ Flooding Process

The 2012 Update encompasses an area located within in T39-40N, R78-79W in both the SCLOU and SCSU (Figure 1.2) and adjacent to the towns of Midwest, Edgerton, and Gas Plant Camp. Although the towns are located within the project area, the Proposed Action does not entail CO₂ injection beneath the towns. Howell continues to isolate and monitor the populated areas as part of previous Proposed Actions. The Phases III/IV EA details the isolation and monitoring efforts associated with the Salt Creek EOR project to ensure CO₂ containment (BLM 2006a).

Figure 2.1 Oil Productin Forecast
Salt Creek Field Total
Average Daily Production



Well Utilization Plan

The Proposed Action for the 2012 Update and the continuation of the CO₂ flood would maximize the use of existing wellbores, both active and abandoned, thereby minimizing the disturbance of additional surface area. The plan would require approximately 666 injection wells, 678 production wells, and 73 monitor wells for a total of 1417 wells. The number of wells includes up to 586 new wells which may be required to replace existing wells or to optimize pattern efficiency. Table 2-1 provides a conceptual summary of wells proposed for use in the field and a schematic representing a potential expansion scenario is shown in Figure 2.2. Howell plans to equip all injection, production, and monitoring wells similarly to those described in the Phases III/IV EA (BLM 2006a).

Table 2-1 Summary of Salt Creek Well Utilization by Formation

Reservoir	WELL COUNTS				Total Well Count
	# Injectors	# Producers	# Observation		
Wall Creek 2	548	491	57		1096
Wall Creek 1	0	0	0		0
Lakota	46	91	7		144
Sundance	46	91	7		144
Tensleep	26	5	2		33
Total	666	678	73		1417

The following subsections describe the three basic types of wells to be utilized for the Proposed Action:

Existing wells

New wells

Plugged and abandoned wells to be re-entered

2.1.2.1 Existing Wells

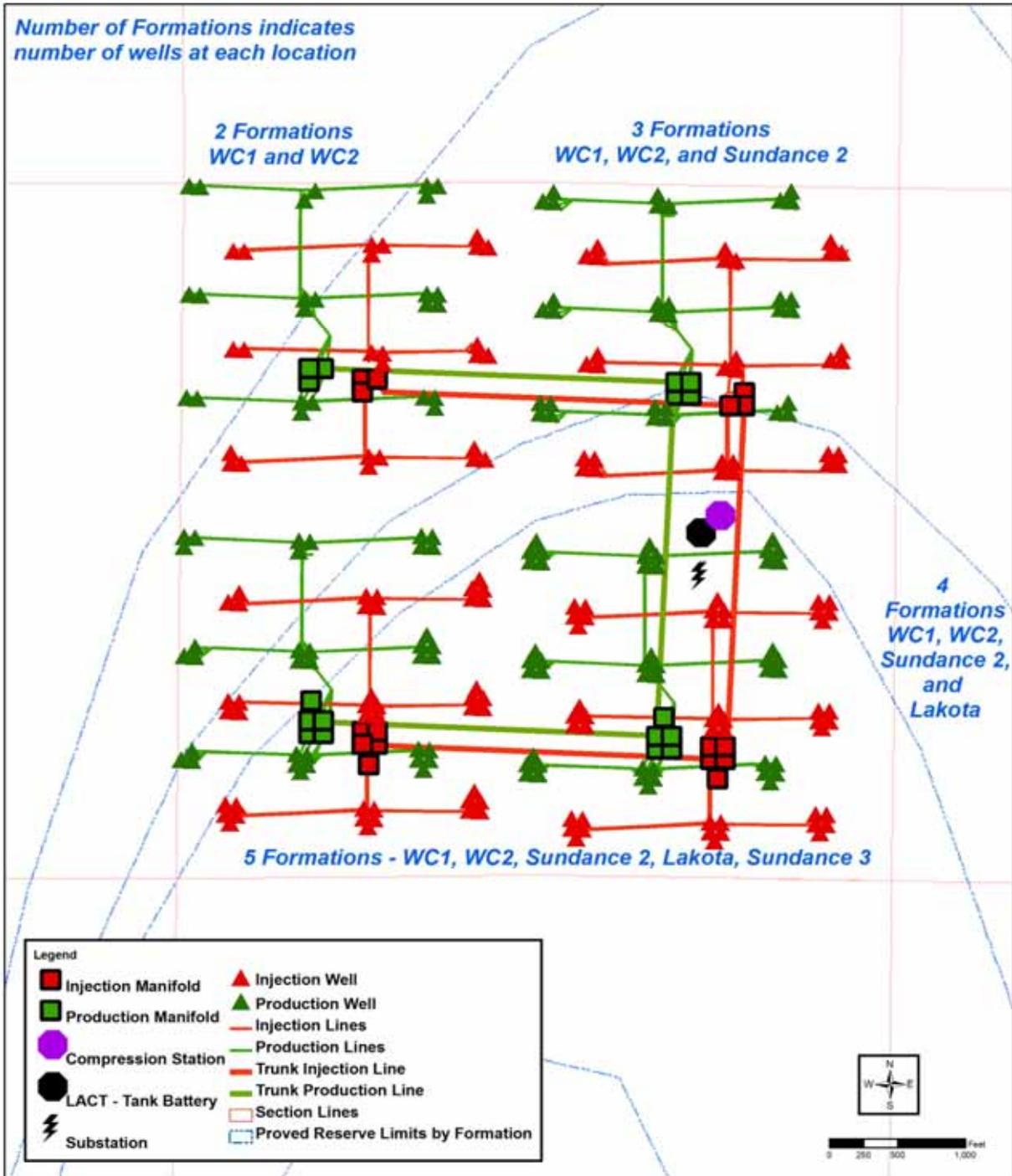
Many of the existing wells in Salt Creek Oil Field would require additional cement behind the casing to adequately contain the CO₂ within the target formation and isolate the other horizons. Each wellbore, active and abandoned, that penetrates the target formation would be evaluated for zonal isolation by previously run or new cement bond logs. Remedial well work would be conducted utilizing the processes and procedures approved and implemented for the Phases II through VIII, XV and XVI areas.

Existing wells not to be used as either production or injection wells would either be equipped to serve as monitoring wells or be shut in. The shut in wells would be used for emergency backup in the case of the unlikely event of a catastrophic failure of an active well.



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Figure 2.2 Production and Injection Schematic
Typical Section
Salt Creek Fieldwide Expansion EA



2.1.2.2 New Wells

Howell's plan to complete the fieldwide pattern expansion includes the drilling of up to 415 new wells. Depending on the target formation, each well would be drilled to an approximate depth of between 900 and 8500 feet from the surface, and would be permitted and constructed according to plans approved in previous EAs for Phases I-VIII, XV, and XVI.

2.1.2.3 Abandoned Wells

Howell plans to workover or re-enter and reactivate approximately 831 previously abandoned wellbores in the project area. Howell also anticipates having to re-plug approximately 1,752 existing abandoned wells. The work procedures for re-entry would follow plans and procedures approved and implemented for the Phases II through XV areas.

Facility Plan

The surface facilities required for the implementation of the 2012 Update would be similar to those installed under Phases I through VIII, XV, and XVI and would include as much of the existing waterflood facilities as possible. The primary differences from waterflood operations would be the use of materials that are compatible with CO₂ production and can withstand higher working pressures. Figure 2.2 shows the layout of a typical section. This figure illustrates a conceptual flow line and injection line layout for areas where multiple target reservoirs are overlaid, as well as locations for production test and treating facilities and injection manifold headers. Under the 2012 Update, the existing system would be extended to accommodate additional EOR wells with new manifolds, flowlines, and pipeline sections. Most of the current gathering and injection systems for existing waterflood activities would be replaced by the new system.

The proposed routing of injection and production lines reflects the use of existing corridors, Rights-of-Way (ROWs), and linear features (e.g., roads). As part of the Proposed Action, Howell would continue to install production and injection lines within the same corridor and follow existing ROWs to the extent practical. Additionally, as with all other phases of the development, Howell would use a Construction Supervisor to ensure that construction and development practices adhere to BLM's guidelines and regulations, such as ROW placement. Howell has either employed contract labor and/or dedicated company personnel to fulfill the role of Construction Supervisor, whose main focus, on behalf of the Project Manager, is to provide on-site company representation and administer the selected installation contractor. This oversight would ensure:

- The scope of work is completed as per the original design, costs, specifications, and applicable permits.
- The work is conducted per Howell's safety and environmental guidelines, regulatory permit requirements, and the Salt Creek Master Service Use Plan (MSUP).
- Necessary departures from the original scope are approved and properly documented.

Howell's proposed 2012 Update includes the continued utilization of existing roads and the replacement or modification of the LACT 11, LACT 20, and LACT 4 in the SCLOU, and A Battery production facility in the SCSU. Howell anticipates constructing a new LACT (LACT 13) in 2013/2014 and other LACTS may be built as conditions warrant... It is not anticipated that the produced water discharge volumes at any LACT would be significantly altered by the new process; therefore, additional discharge points would not be required. Future produced water quality is expected to be generally consistent to that currently being

produced and would be subject to existing permit discharge limits and conditions established by the WDEQ under the established Wyoming Pollution Discharge Elimination System (WYPDES) program. Howell is committed to continuing to meet the requirements of its existing discharge permits per WDEQ requirements and procedures and to implement necessary actions to ensure continued compliance.

2.1.3.1 Production System

This proposed expansion would include the installation of approximately 42 additional header buildings which include both production and injection facilities housed in the same building. The one story building design would be the same as used in Phase XV. As with previous expansions, wellhead production volumes would be transported to the manifold stations via new fiberglass flowlines. Production would be commingled at the production/test header building as in previous phases. However, unlike Phase's 1-IV (but identical to Phases V through VII, and Phase XV), the gas and liquid will be split by bulk separators at the header with liquid and gas routed in separate gathering systems. Each of the production header buildings would also include the appropriate well testing equipment, where individual well production would be tested and measured. Where feasible, new flowlines would be designed and constructed along existing roads and surface disturbances.

Production from the Salt Creek Unit would flow to Salt Creek Unit facilities and production from the Salt Creek South Unit would flow to the A Battery facility.

2.1.3.2 Injection System

The injection system design philosophy follows the same basic approach as with previous phases. Injection flow control previously installed at the wellheads would now be centralized at the injection header buildings. As with all other phases, the injection header buildings would distribute either CO₂ or water to individual wells. These manifolds would be equipped with actuated valves that allow for remote or local selection of the injected fluid (water or CO₂). Well injection volumes would be metered individually at the header buildings. One (1) new injection manifold would be housed in the same building as the production manifold. A similar one story building design as used in Phase XV will be used. Injection fluids, CO₂ and water, would be delivered to the header building via newly constructed pipeline segments tied in to the existing water and CO₂ distribution systems.

2.1.3.3 Gas System

As with Phases I through VIII, XV, and XVI, produced CO₂ gas for 2012 Update would be collected and recycled back to the high-compression gas injection system for re-injection. The required recycle and flash gas compression and dehydration of produced gas would be supported by existing and new facilities. The Phase V EA details this gas gathering system (BLM 2006c). Future recycle compression stations (RCS) would be located adjacent to new or existing production batteries in order to have ready access to power supply and fluid for cooling compressed CO₂.

2.1.4 Ancillary Facilities

2.1.4.1 Access Roads

New access roads would be necessary for 586 new drill wells under the Proposed Action and maintenance access to new power lines. Howell would continue an ongoing program conducted in cooperation with BLM to identify and reclaim unused, redundant, and/or unnecessary roads throughout the life of the Project.

2.1.4.2 Production Batteries

To accommodate this expansion, Howell would retrofit existing batteries and/or construct new production batteries. Each production battery would be designed to process volumes sufficient to support surrounding phase development. The process design would be similar to the existing batteries as detailed in the Base Plan of Development and Phase V EA (Howell 2004, BLM 2006c). Retrofitted batteries would be completed within the confines of existing surface disturbance while a new battery would occupy approximately 500' x 500' with a total long term disturbance of about 5.7 acres. Howell would acquire all required regulatory construction permits as stipulated by Wyoming DEQ.

2.1.5 Disturbance Estimates

Operations that would result in surface disturbance would include the re-working of existing wells on previously disturbed sites and construction of drilling pads for new wells, new flow lines and injection lines, limited new access roads, and production facilities. Surface disturbance would be either short-term (during construction and site reclamation) or long-term (lasting at least 5 years).

New construction would be sited to incorporate existing facilities, to parallel existing lines and roads, and to build on previously disturbed areas as much as possible. . . . Continued fieldwide expansion from the 2012 Update would require 2,495.2 acres of new disturbance that would be reclaimed in the short-term and 281.5 acres of new disturbance that would result in long-term surface disturbance (see Table 2-2).

Table 2-2 Estimated Surface Disturbance Area for EOR Phases VIII-XIV and XVII-XVIII

Category	Quantities and Assumptions	Qty	Length	Width	Short-Term (ST) (Acres)			Long-Term (LT) (Acres)		
					Existing	New	Total	Existing	New	Total
Wells	758 Existing well 125 x 125 LT	758	125	125	0.0	0.0	0.0	271.9	0.0	271.9
	73 Existing observation wells 125 x 125 LT	73	125	125	0.0	0.0	0.0	26.2	0.0	26.2
	1752 Existing wells to be reclaimed 125 x 125 LT	1752	125	125	628.4	0.0	628.4	-628.4	0.0	-628.4
	415 New WC2 250 x 250 ST 125 x 125 LT	415	250	250	0.0	446.6	446.6	0.0	148.9	148.9
	171 New SD3/Lak/TP 310 x 200 ST 125 x 125 LT	171	310	200	0.0	182.1	182.1	0.0	61.3	61.3
Headers	42 Header Buildings 150 x 150 ST 50 x 100 LT	42	150	150	0.0	16.9	16.9	0.0	4.8	4.8
Flowlines	Lines to 1344 wells	1344	1363	25	0.0	1051.3	1051.3	0.0	0.0	0.0
	Lines to Header	7	49000	65	0.0	511.8	511.8	0.0	0.0	0.0

Table 2-2 Estimated Surface Disturbance Area for EOR Phases VIII-XIV and XVII-XVIII

Category	Quantities and Assumptions	Qty	Length	Width	Short-Term (ST) (Acres)			Long-Term (LT) (Acres)		
					Existing	New	Total	Existing	New	Total
	Buildings Per Phase									
Trunklines Trenches	Center Loop Line - Wet & Dry CO2 Supply, Produced Fluids, and Water Injection Lines	2	19351	65	0.0	57.8	57.8	0.0	0.0	0.0
	Lines from Phase 6/7 to RCS #3 Location	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
Valve Sets	70 Valve Sets 86.6 x 86.6 ST 40 x 40 LT	70	86.6	86.6	0.0	9.5	9.5	0.0	2.6	2.6
Access	Access to 42 Headers 150 x 30 LT	42	150	30	0.0	0.0	0.0	0.0	4.3	4.3
	Access to 586 new wells 150 x 20 LT	586	150	20	0.0	0.0	0.0	0.0	40.4	40.4
Power	Lines to 42 Headers 3 x 3 LT	210	3	3	0.0	0.0	0.0	0.0	0.04	0.0
Facilities	Substation Expansion 240 x 346 LT	1	240	346	0.0	0.0	0.0	0.0	1.9	1.9
	Lact Expansions 500 x 750 ST 500 x 500 LT	3	500	750	0.0	8.6	0.0	0.0	17.2	17.2
	Compression Stations 750 x 750 ST 500 x 500 LT	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
Temporary Use Areas	1 Area Averaging 1000 x 1000 ST	14	1000	1000	0.0	321.4	321.4	0.0	0.0	0.0
Total					628.4	2606.0	3225.8	-330.4	281.5	-48.9

*Header disturbance included in flowline and trunkline disturbance.

2.1.6 Non-unitized Tracts

Operations to expand EOR in Salt Creek may encompass a number of tracts which are not part of the SCLOU, as well as the adjacent SCSU. During current waterflood operations, lease allocation has been managed by separately metering fluids which are produced or injected in the various leases, then commingling with SCLOU fluids. Future expansion proposes to continue metering of each lease separately.

Other options are also being considered and each Plan of Development would address allocation among non-unitized tracts.

Mitigation Measures:

The approval of the proposed action is subject to the conductance of all construction, installation, operations, maintenance, reclamation and abandonment activities with all the phases in accordance with applicant committed environmental protection measures (ACEPMs) proposed in previous EAs prepared for the Phase I, Phase II, Phase III-IV, and Phase V projects (BLM 2003, 2004, 2006a, and 2006b), as well as those listed in the Salt Creek Master Surface Use Plan (MSUP) and site-specific mitigations, which are summarized in Appendix A of Salt Creek Fieldwide Expansion, 2012 Update EA (WY060-EA12-206). No additional mitigation measures are required as the current measures have served to eliminate or reduce direct and indirect impacts to the maximum extent practicable.

FINDING OF NO SIGNIFICANT IMPACT

On the basis of the information contained in the EA, and all other information available to me, it is my determination that: (1) the implementation of the Proposed Action will not have significant environmental impacts beyond those already addressed in Casper Resource Management Plan, December 2007; (2) the Proposed Action is in conformance with the Resource Management Plan; and (3) the Proposed Action does not constitute a major federal action having a significant effect on the human environment. Therefore, an environmental impact statement is not necessary and will not be prepared.

This finding is based on my consideration of the Council on Environmental Quality's (CEQ) criteria for significance (40 CFR 1508.27), both with regard to the context and to the intensity of the impacts described in the Salt Creek Fieldwide Expansion, 2012 Update EA (WY060-EA12-206).

Rationale for Finding of No Significant Impact

The primary purpose for conducting an environmental assessment (EA) is to determine whether or not a proposed action will have a significant impact on the human environment and therefore will require the preparation of an EIS. As defined in 40 CFR 1508.13, the Finding of No Significant Impact (FONSI) is a document that briefly presents the reasons why an action will not have a significant effect on the human environment. The regulations further define the term "significantly" in 40 CFR 1508.27 and require that the context and intensity of impacts be considered in analyzing significance. The following provides an analysis of the significance of impacts Salt Creek Fieldwide Expansion, 2012 Update of the CO₂ EOR in terms of context and intensity as defined in the regulations.

“a) Context. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the settling of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short-term and long-term effects are relevant”. (40 CFR 1508.27(a))

“(b) Intensity. This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluation intensity.” (40 CFR 1508.27(b))

I have considered the potential intensity/severity of the impacts anticipated from the Salt Creek fieldwide phased expansion of the CO₂ EOR project, as explained in the 2012 Update EA (WY060-EA12-206). My decision relative to each of the ten areas suggested for consideration by the CEQ. With regard to each:

1. Impacts that may be both beneficial and adverse.

Chapter 4 of the 2012 Update (WY060-EA12-206) identifies the impacts from the Salt Creek fieldwide phased expansion of the CO₂ EOR project. Impacts associated with the development of this project are generally considered to be beneficial. In addition to the impacts, the EA also demonstrates the conformance with the Casper RMP, compliance with Federal, State and local laws, Applicant Committed Environmental Protection Measures (ACEPMs) in Appendix A, and conditioned through mitigation measures, and conditions of approvals, as identified in the EA while not causing impacts that rise to the level of significance as defined by the Council on Environmental Quality.

2. The degree to which the proposed action affects public health and safety.

The communities of Midwest, Gas Plant Camp, and Edgerton are located within or adjacent to the Project Area. Although in the past there have been oil extraction activities within the communities and active pumps are presently located close to the residential and commercial areas, no oil or gas extraction currently occurs inside the town boundaries.

The 2012 Update EA (WY060-EA12-206) analyzed impacts to public health and safety and concluded that due to the development and implementation of a comprehensive CO₂ Seep Containment Plan, public health and safety will not be affected by the proposed action. Specific detail of the impacts and mitigation measures analyzed for public health and safety can be found in 2012 Update EA (WY060-EA12-206) and Phase III/IV (WY060-EA06-18), in Sections 4.4 Human Health & Safety and Ecological Risks of each document.

3. Unique characteristics of the geographic area such as proximity of historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

Historic and cultural resources are addressed specifically below in number 8. There are no known park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas located in proximity of the geographic area or within the 2012 Update project boundary. Specifics regarding the affected resources and the general environment of the project area can be found in Chapter 3 of the 2012 Update EA (WY060-EA12-206).

4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.

The Proposed Action to expand the existing EOR for fieldwide expansion conforms to the plans and policies of the Casper RMP. Specifically, the Proposed Action is in accordance with the planning decisions outlined in the Salt Creek Management Area (MA) (BLM 2007). Decision 7045 states, "The Salt Creek MA is established on areas determined to have a high development potential as defined in the Casper Field Office RFD Scenario for Oil and Gas Development (23,911 acres, of which 19,325 are federal surface). Oil and gas development is a priority in the area with minimum restrictions. New oil and gas leases in this area would be issued with standard stipulations only. Development will comply with nondiscretionary laws like the ESA, the NHPA, etc., but discretionary timing stipulations ... will not be considered."

Howell has held town meetings periodically in Midwest since 2003, the most recent in October of 2011, to present the proposed development and to answer questions regarding development. Topics discussed included future phase development within Salt Creek Oil Field, monitoring plans for the towns of Midwest and Edgerton, and emergency sirens erected in the towns by Natrona County Emergency Management and subsidized by Howell Petroleum. Going forward, due to the limited attendance of the public meetings, Howell will update project progress and plans via city council meetings. Public meetings will be held as needed.

No anticipated effects have been identified that are considered “highly controversial”. “The term ‘highly controversial’ refers to instances in which ‘a substantial dispute exists as to the size, nature, or effect of the major federal action rather than the mere existence of opposition to a use.’” *Hells Canyon Preservation Council v. Jacoby*, 9 F.Supp.2d 1216, 1242 (D. Or. 1998).

5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

The Salt Creek Oil Field and surrounding region has a long history of oil and gas activity. Initial production began in 1889 and, to date, has produced over 700 MMBO (million barrels of oil), from 11 producing horizons. Howell introduced state-of-the-art tertiary enhanced oil recovery (EOR) technology by injecting CO₂ to increase oil production that would otherwise not be recoverable by existing waterflood operations in 2003 and continues today.

Applicant committed environmental protection measures (ACEPMs) proposed in previously prepared environmental assessments for the Phase I, Phase II, Phase III-IV, and Phase V projects (BLM 2003, 2004, 2006a, and 2006b), as well as those listed in the Salt Creek Master Surface Use Plan (MSUP) and site-specific mitigations, which are summarized in Appendix A of the 2012 Update EA (WY060-EA12-206) have served to eliminate or reduce direct and indirect impacts to the maximum extent practicable.

6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

The Salt Creek Oil Field and surrounding region has a long history of oil and gas activity. Initial production began in 1889 and, to date, has produced over 700 MMBO (million barrels of oil), from 11 producing horizons. Howell introduced state-of-the-art tertiary enhanced oil recovery (EOR) technology by injecting CO₂ to increase oil production that would otherwise not be recoverable by existing waterflood operations in 2003 and continues today. The 2012 Update Project for Salt Creek fieldwide phased expansion of the CO₂ EOR does not establish a precedent nor does it represent a decision in principal about future consideration.

7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.

Cumulative impacts are described in Chapter 5 of the 2012 Update EA (WY060-EA12-206). The affected resources analyzed are not approaching conditions where additional increments associated with the Salt Creek fieldwide phased expansion of the CO₂ EOR project when added to the past, present, and reasonably foreseeable future actions have consequential cumulative effects that rise to level of significance as defined by the Council on Environmental Quality.

8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historic resources.

Prior to authorizing future actions, the BLM cultural resource specialist will analyze each undertaking to determine: 1) any further cultural resource inventory needs, and 2) evaluate its potential to affect any cultural resources eligible for or listed on the NRHP. Most, if not all, of the inventory needs will involve a current assessment of previously documented prehistoric or historic period resources. The assessment will analyze and document the property's current condition. The analysis will assess the property's integrity and apply the four National Register criteria as outlined in 36CFR60.4. If resources are found to be eligible for the NRHP (or contributing to its eligibility in the case of a large district), avoidance or project redesign will be the first option and will result in a no effect determination. In those rare circumstances where NRHP eligible resources cannot be avoided, appropriate mitigation measures will be developed in consultation with the Wyoming SHPO. The measures will also be implemented prior to approving the action.

In general, specific compliance procedures for meeting the requirements of the National Historic Preservation Act, as amended, are outlined in a State Protocol Agreement between the Wyoming BLM and Wyoming SHPO dated March 8, 2006. All requirements of this protocol agreement will be followed for all BLM authorized actions under this environmental assessment.

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

The 2012 Update for Salt Creek fieldwide phased expansion of the CO₂ EOR occurs in an area that has been disturbed for over 100 years in the search for and development of petroleum resources. The threatened, endangered, and other special status plant species evaluated by this analysis are not known to occur in project area region, and no habitat for these species was observed within the project area boundaries. Based on the historical use of Salt Creek Oil Field, lack of plant species' observations, and the committed environmental protection measures to avoid steep slopes during construction, it can be assumed that no impacts to threatened, endangered, or other special status plant species would occur as a result of the proposed project. Therefore, project development will have a "No Effect" on federally listed species.

10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

The proposed action is consistent with all Federal, State, and local laws.



Assistant Field Manager, Lands and Minerals
Casper Field Office

8/17/2012
Date