



OPERATIONS SAFETY MANAGEMENT PLAN

Submitted with Form 2A Application for

Blue 3-65 33-32-31

Plan date: February 9, 2021

Submittal Date: September 15, 2021

**Crestone Peak Resources' Operations Safety Management Plan is
consistent with COGCC Rule 602.d as described herein.**

Crestone Peak Resources' ("Crestone") has established and maintains written Operations Safety Management Programs for all Oil and Gas Operations for the purpose of:

- Managing compliance with the various oversight agencies.
- Managing change due to alteration or adjustment to any piece of equipment, operational procedure, setpoint, material or pipe specification or chemical on an existing installation that is not considered a replacement in kind.
- Pre-startup safety review.
- Assessing risk during the planning and design phases of projects when new structures, projects, equipment, and infrastructure are proposed for construction.
- Preventing potential threats to Public Health, Safety, Welfare and the Environment (PHSWE)

The following comprehensive plans are attached in Appendices A through D attached hereto, which collectively constitute Crestone's Operations Safety Management Plan:

- A. Compliance Management Program
- B. Management of Change Plan
- C. Pre-Startup Safety Review
- D. Risk Management documents

Section 1.0 of the Compliance Management Program outlines the regulatory agencies or departments that guide Crestone's Operations Safety Management Plan. Those regulatory agencies are:

- Colorado Oil and Gas Conservation Commission (COGCC)
- Colorado Department of Public Health and Environment (CDPHE)
- Occupational Safety and Health Administration (OSHA)
- Department of Transportation (DOT)
- Colorado Public Utilities Commission (PUC)
- Bureau of Land Management (BLM)
- United States Environmental Protection Agency (EPA)

Section 1.0 of the Compliance Management Program also states that Crestone's Compliance Management Program consists of:

- Compliance databases
- A centralized SharePoint portal with prescriptive procedure controls using: standard operating procedures (SOPs); work practices and plans; operational manuals; training protocols; process flow diagrams compliance tracking spreadsheets; and record control and traceability.

The attached documents outline the practices and procedures that would be enacted and followed at any Crestone site. Through implementing these plans, Crestone is committed to training its employees in the safe conduct of all job responsibilities, including safe operation and location of all equipment, and Crestone ensures that all contractors, subcontractors and persons directly under Crestone's control receive adequate training and are aware of the hazards presented by Crestone's Operations.

Appendix A



DATE OF ISSUE: 2/09/2021	SUPERSEDES:	Control Number: 1.00Aa
EFFECTIVE DATE: Feb 9, 2021	EXECUTIVE OWNER: David Stewart	

ENDORSEMENTS:

NAME	TITLE	SIGNATURE	DATE
David Stewart	VP EHS&R	<i>David Stewart</i>	Feb 9, 2021

1.0 SCOPE AND INTRODUCTION

Crestone Peak Resources (Crestone) operates in the Colorado Denver-Julesburg Basin along the front-range of Colorado. As an exploration and production company our operations are regulated by the Colorado Oil and Gas Conservation Commission (COGCC), the Colorado Department of Health and Environment (CDPHE) as well as applicable federal regulations under OSHA, the Department of Transportation (DOT), the Colorado Public Utilities Commission (PUC), the Bureau of Land Management (BLM), and the US EPA. The Crestone Compliance Management Program, outlined in this document, addresses Environment, Health, Safety, and Regulatory (EHS&R) compliance requirements. The Crestone environmental and regulatory management system constitutes a regulatory compliance program as defined by the COGCC. Crestone operates with a credence to operate safely, responsibly and with respect for the environment, while minimizing the temporary impacts of our operations on communities. As part of our environmental commitment to continuous improvement in 2019 Crestone joined the CDPHE [Environmental Leadership Program](#).

Crestone's Compliance Management System Program consists of compliance databases, a centralized SharePoint portal, along with administrative framework controls. These controls include prescriptive procedures using Standard Operating Procedures (SOPs); work practices and plans, operational manuals; training protocols; process flow diagrams that link regulatory requirements to operations and required regulatory forms and report submissions; compliance tracking spreadsheets; and record control and traceability. Controls for prevention,



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mitigation and self-checking coupled with the prescriptive controls provide administrative and engineering controls for the EHS&R operations. These components, outlined below, along with this program policy define the authority and responsibility of each topical area or process within the scope of the management system, and provide a system to meet the regulations under which Crestone operates.

The Compliance Management Program is designed to meet applicable federal, state, and local EHS regulations associated with our operations. Collectively, this program serves as a framework against which Crestone personnel can understand the EHS&R requirements under which our business operations and provides linkages between business operations and/or events and the corresponding requirements identifying actions required, *e.g.*, whether a operation or event requires a report or form to be submitted, including agency reporting, or recordkeeping is required. As part of our management program and system our operations are evaluated on a periodic basis to determine compliance with company and regulatory requirements. Recognized authorities and responsible parties are clearly defined in the policies, practices, and procedures that comprise the EHS&R management system.

2.0 EHS&R Topical Areas

The Crestone EHS&R department operates under numerous regulatory and guidance programs. These topical areas include environmental and regulatory requirements codified and enforced by the US EPA, CDPHE, COGCC, PUC, DOT, BLM, and local counties and municipalities. Health and Safety requirements are based upon OSHA and local counties and municipality requirements. To properly comply with and address the associated regulations, rules, and guidance's Crestone segregates their EHS&R operations into Regulatory, Air Quality, Environmental, Emergency Response, Health & Safety and Wildlife areas where possible.

3.0 COMPLIANCE MANAGEMENT SYSTEM COMPONENTS

The Crestone system utilizes a propriety compliance and regulatory best practices-based system consisting of a centralized portal that contains approved controlled documents. To complement the control diagrams and manage the numerous reporting and tracking requirements, Crestone employs several commercial



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databases and software elements. This system was developed upon the principles found in the ISO 14001 and OSHAS 18001 quality assurance standards. It is documented in a series of written practices, standard operating procedures (SOPs), process flow diagrams (PFDs), forms, guidance documents, manuals, training protocols, and compliance tracking tools. Practices, procedures, PFDs, and some forms are Crestone controlled documents that are formally approved by the VP of EHS&R.

3.1 Centralized Microsoft SharePoint Portal:

The central portal for our EHS&R management system is provided through Microsoft SharePoint. This portal serves as a common entry point for all supporting applications which include: key business operations controlled documents as practices and procedure process flow diagrams in Microsoft Visio and other formats (see section 3.2), electronic record storage within various databases (see section 3.3), calculational tools built within Microsoft Excel workbooks (see section 3.4) and document management through a workflow encompassing the creation, review, approval, issuing, and document and record retention practices for information within the scope of the EHS&R management system. The portal will also provide for scheduling, monitoring and automated notification of key management system tasks within the SharePoint calendar functionality.

3.2 Controlled Documents

Crestone has prepared, and is continually updating Practices, Procedures (SOPs), Plans, PFDs, and Forms that document and link the operational phases to COGCC and other regulatory compliance requirements. These controlled documents are written in accordance with an EHS&R Controlled Documents Procedure (1.03Da).

These documents define the scope authority and responsibility of the operations. The process flow diagrams, along with written policies and procedures compliance databases and calculation worksheets described below, provide a systematic process for meeting reporting and response regulations.

3.3 Compliance Management Software and Databases

The system employs multiple database systems to store EHS&R records. Below is a list of those systems and an explanation of how they are used:

- Wellview®



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- Is a well information management system. This is used by Crestone for tracking well life cycle data and information from spud through completion to plug and abandonment
- eMaint™
 - A computerized maintenance management system software used at Crestone for tracking reclamation, maintenance, and general site housekeeping work under the COGCC 1000 Series Rules. This system tracks workorders so it is used in conjunction with several tracking spreadsheets to trigger activities.
- Asset & Compliance Tracking System (ACTS™)
 - ACTS is a comprehensive Environmental Management Information System platform. Crestone employs ACTS for air quality compliance and tracking, form submission tracking for reporting under the COGCC 300 series Rules. ACTS is in the process of being expanded for reclamation, baseline groundwater sampling, and stormwater compliance under COGCC Rules 318A.f, 609, 1002.f, 1003, and 1004.
- VelocityEHS™
 - This EHS management software tool is employed for tracking safety incidents, fires, air releases, H₂S events, and spills/ material releases under the COGCC 600 Series and 900 Series Rules.
- EU and P3
 - This system is used for Form 7 production reporting under COGCC Rule 309. This system is also used in conjunction with Crestone's ACTS database to track well status and mechanical integrity tests under COGCC Rules 319 and 326.
- GIS dashboard for recording Crestone's flowline locations under the COGCC 1100 Series Rules.

Crestone is continually evaluating and testing new software options to enhance compliance management. Additional software tracking and reporting elements will be added once fully vetted and validated.

3.4 Document Control Process

The Crestone Microsoft SharePoint also provides a centralized repository for compliance documents as well as a store for or linkage to compliance records. Current controlled policies, practices, plans, PFDs, and procedures are stored on the Microsoft SharePoint. User manuals and training protocols reside in subject area subdirectories along with records, reports, and forms submitted to regulatory agencies.



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Microsoft SharePoint allows the use of formal workflows to track tasks and elements. SharePoint workflows will be included in the document control process if Crestone identifies this as the best options for process control.

3.5 Management System Controls

Crestone employs four types of risk management controls: Prescriptive, Preventive, Mitigation, and Self-Assessment. Prescriptive controls are explicit written policies and procedures that prescribe the policy or steps needed to meet compliance. Permits are also an example of prescriptive control. Preventive controls are engineered equipment or processes designed to prevent an undesired occurrence or event, such as using runoff control structures and practices. Mitigation controls are also engineered equipment or processes designed to respond to an unwanted occurrence to minimize harm. An example is secondary containment should a primary container leak. Self-assessment, or self-checking, controls entail a defined process for inspection and assessment of business assets and operations. Management system controls are employed across the Crestone EHS&R topical areas and where they involve E&P operations. The Crestone topical areas are significantly segregated by the applicable regulations.

3.5.1 Prescriptive Controls

Crestone has written prescription controls as Practices, Plans, Procedures (SOPs), PFDs, guidance documents, and operational manuals across EHS&R and operations departments. Current written practices and procedures, with the date of this program document, are provided in Attachment 7.1. The current list of controlled documents is maintained electronically on the Crestone EHS&R SharePoint site.

3.5.2 Preventive Controls

Preventive controls include policies, practices, and procedures that are designed to identify nonconformity and then initial a control before any substantial impact. The Crestone Compliance Management Program is a type of preventive control. Internal and third-party assessments are also employed by Crestone as a means of preventive control. More specific preventive controls are employed within EHS&R areas, such as the Preventative Maintenance and Operational Practices program and the Predictive Analysis Procedure within the Air Quality area.

3.5.3 Mitigation Controls

Mitigation controls are the engineered or process response taken when an event, such as spill, warrants an EHS&R action. Mitigation controls are described in the company's policies, practices, procedures, and flow diagrams. As an example, should a spill result in an impact to a soil site, the Impacted Soil Excavation and Sampling Procedure describes the mitigation steps that are required including sampling, analysis, and remediation. The responsibility and authority of Crestone team members, or contractors, is identified along with COGCC and/or CDPHE reporting requirements.

3.5.4 Self-Assessment Controls

Crestone also employs on-going self-assessments. These controls include practices, inspections, and reviews performed by Crestone personnel or utilize third-party contractors. The following self-assessment controls are performed on a routine basis:

- Verification and Compliance Review Practice which provides for evaluation of the conformance of Crestone to federal, state, local, and internal requirements and to provide recommendations for the continuous improvement of EHS&R. This practice has been developed to ensure consistency between Crestone and International Organization for Standardization (ISO) 19011 Compliance Reviewing protocols and procedures.
- Storm water inspections are conducted after rain events, every two weeks at a minimum during construction, monthly during interim reclamation and annually for all sites,
- Spill Prevention, Control, and Countermeasure (SPCC) inspections are conducted annually for all sites,
- Leak detection and repair (LDAR) inspections are conducted in accordance with the CDPHE Reg 7 requirements but all sites are inspected annually, and most sites are inspected either semi-annually or monthly,
- Audio, visual, and olfactory (AVO) inspections are conducted weekly,



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- Migratory Bird Treaty Act (MBTA) inspections are conducted during the initial site assessment and prior to construction, and if birds or other sensitive species are detected we work with Colorado Parks and Wildlife to develop a monitoring and mitigation plan,
- Baseline water sampling is conducted in accordance with the COGCC requirements or on a more extensive basis depending on local government requirements or requests,
- Interim and final reclamation sites are inspected on a quarterly basis by our qualified third-party contractor. During these inspections, we also include findings related to weed management, housekeeping and signage,
- Routine safety and job safety analysis (JSA) reviews are done on all active construction, drilling, completions and flowback sites by our internal team of four safety professionals, and
- Periodic in-depth contractor compliance audits are conducted on contractors that conduct higher risk work for Crestone.

3.6 Management of Change

Crestone has an active corporate-level management of change (MOC) process and program. The Crestone Management of Change Practice applies to all Crestone personnel and their contractors. Any change of regulations or internal policies, practice, and procedure which is not a Replacement in Kind, as defined by the practice, must be managed via MOC Practice.

4.0 RESPONSIBILITIES AND AUTHORITY

The overall EHS&R compliance program is under the authority of the Vice President of EHS&R. Each policy, procedure, and practice define the responsibility and authority for the scope of that document. This may start with the VP of EHS&R, or the Managers and Supervisors, or their designee(s), within an operational or subject matter area.



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5.0 REFERENCES

- Colorado Oil and Gas Conservation and Commission Regulations:
<https://cogcc.state.co.us/reg.html#/overview>
- Colorado Department of Public Health & Environment Divisions and Points of Contact: <https://www.colorado.gov/pacific/cdphe/divisions>
- Bureau of Land Management Oil and Gas: <https://www.blm.gov/programs/energy-and-minerals/oil-and-gas>
- Occupational Safety and Health Administration, Laws and Regulations: <https://www.osha.gov/laws-regs>
- Department of Transportation, Pipelines and Hazardous Materials: <https://www.transportation.gov/pipelines-hazmat>

6.0 REVISION HISTORY AND EXPIRATION

Note: Revision # should be listed in descending order starting with most recent version at the top

REV. #	DATE	Description/Modification	Revision Section (s)	Author(s)
1	2/9/2021	Formatting	All	Craig Bryant

7.0 ATTACHMENTS

Attachment 7.1: ESH&R Practices and Procedures

A list of Crestone practices, procedures, and policies as of the date of this document are provided. The current list of controlled documents is maintained electronically on the Crestone EHS&R SharePoint site.

Attachment 7.1: Policies, Practices, and Procedures

The latest versions are provided on the Crestone ESH&R
SharePoint Site

Document Name	Document Control Number
Corporate Program Level	
EHS&R Policy Statements	NA
Management of Change Practice, with attachment	52.10Ac
EHS&R Program Level	
EHS&R Compliance Management Program Practice with Attachment	52.10Aa
Verification and Compliance Review Practice	52.10Ab
Risk Management Practice	52.10Ad
EHS&R Risk Matrix	52.10Ae
Incident Management Practice	52.10Af
Controlled Documents Procedure	53.10Aa
Attachment 1 to Controlled Documents Procedure	53.10Aa attachment
Pre-Startups Safety Review Checklist, PSSR Form	55.10Aa
Corrective and Preventive Action Practice	52.10Ag
Emergency Response	
Emergency Response Plan (facility wide) approved 4/25/2017	42.80Ai
Regulatory	

COGCC Form 5 Drilling Completion Report Procedure	23.20Aa
COGCC Form 5a Completed Interval Report Procedure	23.25Aa
Conditions of Approval: Permit Approved/Clear to Build	22.21Aa
Conditions of Approval: Permit Approved/Clear to Build, Attachment 12.1 Workbook	22.21Aa attachment 12.1
Conditions of Approval – Form 6 PDF	24.21Ab
Air Quality	
CPR STEM Plan	12.411Aa
Facility Response Plan - Liquids Handling HUB	12.111Aa
Emergency Response Action Plan - Liquids Handling HUB	12.111Ab
STEM Inspection Training Plan	12.311Aa
Critical Operating Parameter Selection and Monitoring SOP - STEM	13.311Aa
Predictive Analysis Procedure (STEM)	12.311Ab
STEM and LDAR Inspection and Maintenance Standard Operating Procedure	13.311.Ab
NSPS OOOOa Optical Gas Imaging Fugitive Emission Monitoring Plan	12.311Ac
STEM Preventative Maintenance and Operational Practices Program STEM MOPP	12.311Ad
Environmental	

Spill and Environmental Release and Reporting Practice	32.29Aa
Spill and Environmental Release and Reporting Practice Attachment 12.1 - PFD	32.29Aa Attachment 12.1
Impacted Soil Excavation and Sampling	33.27Ab
Sampling and Testing in Conjunction with Produced Water Vessel Removal	33.27Ac
PFD for Sampling and Testing in Conjunction with Produced Water Vessel Removal	33.27Ac Attachment 13.2
Baseline and Post-Operations Water Sampling Procedure	33.20Aa
Waste Management Practice	32.18Aa
Materials Management Plan	32.18Ab
Field-Wide Stormwater Management Plan for Construction Activities, East DJ Basin	32.10Ab
Field-Wide Stormwater Management Plan for Construction Activities, West DJ Basin	32.10Ac
Wildlife	
Wildlife and Habitat Surveys Practice and PFD	32.210Aa
Health & Safety	
Confined Space Practice	42.70Aa
Electrical Field Safety Manual	43.80Aa
Electrical Hazards Practice	42.80Aa
Excavation and Trenching Practice	42.70Ab
Ground Disturbance Practice	42.80Ab

Hazard Identification, Elimination and Control Practice	42.70Ac
HAZCOM and Chemical Management Practice	42.70Ad
Hot Work Practice	42.70Ae
Hydrogen Sulfide Practice	42.70Af
Incident Management Practice	42.70Ag
Job Safety Analysis Practice	42.70Ah
Lockout Tagout (Control of Hazardous Energy) Practice	42.70Ai
LOTO System Procedure Current	43.70Aa
Medical, First Aid, & Biological Hazards Practice	42.70Aj
Personal Protective Equipment (PPE) Practice	42.70Ak
Pressure Hazards Practice	42.70Al
Safe Vehicle Usage Practice	42.80Ac
Short Service Employee Practice	42.80Ad
Site Access Practice	42.80Ac
Velocity EHS Haz ID and BBSO Entry	42.80Ag



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Working Alone Practice	42.70An
Working from Heights Practice	42.70Ao
NORM Practice	42.80Ah

Appendix B



MANAGEMENT OF CHANGE PRACTICE

DATE OF ISSUE:	SUPERSEDES:	Control Number: 1.02Ca
EFFECTIVE DATE: Aug 27, 2020	EXECUTIVE OWNER: Danny Knutson	

ENDORSEMENTS:

NAME	TITLE	SIGNATURE	DATE
David Stewart	Vice President of EHS&R	<i>David Stewart</i>	Aug 27, 2020
Danny Knutson	EHS Manager	<i>D Knutson</i> <small>CRESTONE PRACTICE: AUG 27, 2020 05:45 PM</small>	Aug 27, 2020

1.0 PURPOSE

Changes in a worker's environment can increase risks to people, the environment, and assets. To mitigate these risks, management developed a management of change (MOC) process that identifies measures to safely manage and implement changes. This process and requirements for safely managing change is described in this MOC practice.

This practice provides a consistent process to manage changes.

The process includes a step to qualify a change to determine if a specific change must undergo the MOC process. If the change must undergo the MOC process, this practice ensures that these changes, such as proposed facility or operational changes, are reviewed before they are implemented.

This practice conforms to Crestone Peak Resources' policies and practices, conforms to standards and guidance documents, and complies with regulatory requirements.

2.0 APPLICABILITY AND SCOPE

This practice applies to all Crestone Peak Resources employees and contractors at all facilities owned or operated by Crestone Peak Resources. This practice applies to all Crestone Peak Resources owned facilities.

3.0 ACRONYMS AND DEFINITIONS:

Acronyms

CRESTONE	Crestone Peak Resources
CFR	Code of Federal Regulations
EHS&R	Environmental, Health, Safety & Regulatory
MOC	Management of Change
PHA	Process Hazard Analysis
PSM	Process Safety Management
PSSR	Pre Startup Safety Review
RA	Risk Assessment
SME	Subject Matter Expert

Definitions

<u>Emergency change:</u>	A “not-in-kind” change to be implemented without the use of the normal approval procedure. To be initiated when immediate action is required to prevent serious safety or environmental consequences.
<u>“In kind” change:</u>	A replacement that satisfies the design specification; a close replication or exact replacements, e.g. of existing components or equipment, that are highly unlikely to produce adverse effects or changes the original design specifications.
<u>Management of change:</u>	The process of requesting, evaluating, planning, approving, and implementing change to control or eliminate potential risks introduced by the change.
<u>Process hazard analysis:</u>	A PHA is an organized and systematic review held to identify and analyze the significance of potential hazards and develop recommendations for improving safety, preventing releases, or

**Process Safety
Management facility:**

reducing the consequences of unwanted or unplanned releases.

A facility regulated under OSHA 29 CFR 1910.119, which is a federal standard that contains requirements for preventing or minimizing the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals and flammable liquids and gases. For flammables, a PSM facility with a covered process is one that has over 10,000 pounds of a flammable liquid or gas and fits the criteria of the PSM standard.

**Qualified change or a
not-in-kind change:**

A qualified change, also called a not-in-kind change, must be reviewed using the MOC process. If a change is not listed in the Qualification Section, it is considered an *in-kind* or *replacement in-kind change*, and does not go through the MOC process.

Risk assessment:

The identification and analysis of the likelihood and outcome of specific events or scenarios considering probability and impact.

**Subject Matter
Expert:**

A company employee, typically a senior level position, who exhibits the highest level of expertise within their discipline, on a subject, or in a specialized area, often having obtained this expertise through a combination of formal training and experience.

Temporary change:

A change that is not intended to remain in service longer than six months. A temporary change will be returned to original state or a new temporary MOC or a permanent MOC will be generated. Pilot projects are also considered temporary changes.

4.0 RESPONSIBILITIES AND AUTHORITY

For a complete list of responsibilities and authority, please refer to Appendix C: Roles Responsibilities and Approvals.

5.0 PRACTICE DESCRIPTION

5.1 MOC requirements

An MOC is required anytime there is an alteration or adjustment to any piece of equipment, operational procedure, setpoint, material or pipe specifications, or chemical on an existing installation that is not considered a replacement in kind (RIK).

MOC's typically only cover surface equipment changes downstream of the wellhead (including the wellhead) and end at the custody meter/sales point. MOC's are required for changes to the process (including type of fluid/gas), automation/electrical setpoints, facility operation, and battery/facility equipment (except for in-kind replacements).

All changes or projects regardless of risk ranking on the CPR Risk Matrix require an MOC. Changes that are "Low" risk may require less detail. Consult with the Design Approver on required level of detail.

All personnel may request a MOC. This practice must be followed for all changes that are not a "replacement-in-kind" to ensure changes are adequately reviewed.

In general, these types of changes may be categorized by the following:

- modifications of any existing piece of equipment, valve, pipe, fitting, etc.;
- installation of new equipment, valves, pipe, fittings, etc.;
- a change in operating or mechanical procedures;
- a change of operating parameters or status;
- changes in a chemical or catalyst used in the process, etc.;
- any other revisions or modifications that may result in deviation from normal conditions;
- adding or removing personnel integral to the operation of an asset or facility;
or
- changes resulting from action items that are identified from a risk assessment or PHA.

For a more comprehensive list of changes, please refer to the Appendix A – Examples of Changes that Require an MOC.

Each qualified change shall be documented and communicated to all affected employees, contractors, and external stakeholders. This can be done using Crestone's incident management system.

Note

An “in kind” change (also known as a replacement) does not require MOC review.

Non-PSM facilities may incorporate repetitious changes or modifications to a system (same change on duplicate sites). A standard operating procedure should be considered for this type of change. When in doubt, consult with your supervisor or environment, health & safety (EHS&R) representative.

5.2 MOC process

The major steps to the Management of Change process are initiate, design approval, concept approval, commencement of work, pre startup safety review, implementation, and closure.

An employee or contractor who recognizes and communicates the proposed change can request a MOC be completed. A Crestone representative authorized to initiate MOCs will review the proposed change and initiate the change request using the incident management system. For details regarding technical content and details within the MOC, please reference Appendix B: MOC Documentation and Technical Content.

5.2.1 Change Evaluation and Approval

The MOC Coordinator will review the change request and information provided to ensure adequate information is provided within the MOC. The MOC Coordinator must be provided a list consisting of design approvers and approvers from all impacted departments following the MOC Guideline requirements. EHS&R representatives should be included in these lists if there is risk to Environmental, Health, or Safety.

After the Initiator creates the MOC, a review by a design approver takes place. This is to ensure the information provided is adequate, accurate, and can be operated safely.

Once the MOC is approved by the design approver, it moves to the MOC Approvers. Each MOC Approver shall;

- Review the MOC and associated material as assigned;
- Request additional reviewers, if required;
- Provide or verify the applicable specifications or standards;
- Request revisions to the MOC through the incident management system, if required; and/or
- Request more information from the initiator, if needed.

The assigned reviewers should complete their evaluation as soon as possible or no greater than seven days once notified by the MOC coordinator. If revisions are requested or more information is needed, an extension can be approved by the MOC coordinator and MOC initiator. Reviewers should designate an alternate approver if they are unavailable.

Once all approvals are received, the MOC initiator can authorize work on the project. Any additional supporting documentation will be uploaded into the MOC within the incident management system.

Appendix C contains additional guidance on Roles and Responsibilities.

5.2.2 Starting work

No physical work is to begin until the MOC is fully approved by all Approvers, which includes construction, setting pumping units on location (air permitting regulation), or making automation changes (alarm setpoints, Cygnet tie-ins). Approvers may provide email or text approval if absolutely necessary to the Initiator if they cannot log into the system. The email or text should be saved in Velocity. Verbal approvals are not permitted.

MOC Approvers may delegate their authority while out on (e.g. PTO) provided delegatee has sufficient knowledge to signoff. Approval should be logged via email (no text SMS) and the absent Approver shall log their approval in the system upon their return.

With Manager approval, MOC Initiator may begin the AFE and order equipment prior to MOC approval (e.g. after project is approved through “Project Workbook” or has satisfactory economic justification).

Exception

Work may begin prior to all Approvals only if VP, Operations approval has been received. Exceptions should be risked using CPR Risk Matrix and this should be included when presenting to VP and attached to MOC, along with written (e.g. email) VP approval.

5.2.3 Approval for Startup

After the change is complete, the MOC initiator or delegate confirms that the change has been completed according to the approved MOC and supporting drawings/documentation. Any change including as-built discrepancies to the approved MOC must be reviewed and approved by the MOC Coordinator and applicable reviewers. Approval of further changes, which are completed after the MOC has been approved, must be reviewed and approved prior to startup. Prior to implementation of the change, the MOC initiator or delegate shall ensure all required documentation, which may include a pre-startup safety review (PSSR) is completed. Employee notification and training (if required) shall be completed or documented as an action with the PSSR (e.g. where training cannot occur until after startup). All PSSRs must be completed with the final sign off by department Manager, VP, or delegate.

5.2.4 Approval for Closure

Once the change is implemented, the next step is to verify all remaining action items are closed. If a PSSR was performed, all action items must be completed prior to closure of the MOC. Once all action items are completed, the MOC coordinator will review the MOC to verify all information has been provided and accurate, then close the MOC.

Note

This process may take time to complete. If the MOC is open for longer than six months, a review of the MOC must take place to verify action items are being completed.

5.2.5 Pre-Startup Safety Review

A Pre-Startup Safety Review is required when the EHS&R risk is determined to be medium, high, or extreme per the EHS Risk Matrix. For all projects that are low risk, a PSSR is not required. Projects that are non-routine, but low risk should have a walkthrough completed, but a full PSSR will not be required.

The Pre-Startup Safety Review shall utilize the Pre-Startup Safety Review Checklist to document signoff from each impacted department. Action items shall be created for all incomplete items and documented using the Pre-Startup Safety Review Checklist. The MOC Initiator is responsible for verifying these action items are closed within the allotted time.

5.3 Change Classification

The change is categorized by the engineer and/or department manager as one of three types;

- Temporary,
- Emergency, or
- Permanent.

All proposed changes are forwarded to the MOC coordinator.

5.3.1 Temporary Changes

All temporary changes must be documented using the MOC process. A temporary change consists of any change that is expected to remain in place less than six months. The temporary change process will be similar to a permanent change, except that the change must be either reverted back to its' original state or moved to a permanent status within the six-month time period. Specialized extensions can be requested, but must be approved by the department manager, superintendent, or VP.

The end date of the temporary change should be selected based on the anticipated (best guess) duration of the change. Temporary changes require all the same approvals, technical details, and scrutiny of a MOC.

A temporary MOC may be used for changes made to a system for trial purposes, e.g. where it is not 100% certain that the change will be left in place permanently, or to test the effects of the change before committing to it permanently. A temporary MOC shall be converted to permanent as soon as it becomes clear it is permanent or after the original duration has expired. Otherwise, the MOC should be closed after reverting the system to its original state. Requests for extensions of the temporary MOC period may be sent to the MOC Coordinator with a detailed explanation of why the extension is being requested. All documentation will be uploaded into the Incident Management System as an attachment.

If the temporary change required a PSSR for startup, a PSSR should be conducted once change is reverted to original state. If a temporary change required a PSSR for startup, that PSSR is acceptable if the MOC is changed to permanent status.

5.3.2 Emergency Changes

An emergency change is implemented when an immediate action is required and the formal MOC process cannot be completed. An emergency MOC requires approval from a department manager, superintendent, or VP. This approval must be documented prior to commencing work and can be documented by e-mail. Texts will be acceptable as a last resort. Over-the-phone approval will not be sufficient.

Emergency MOC is used to document a change that will:

- Prevent injury to personnel
- Damage to equipment or facilities
- Prevent impact to the environment or community

An emergency MOC is only required to have one “Emergency Approver”. The initiator should not be the Emergency Approver.

The Emergency Approver shall be a technical manager. Examples include Production Superintendent, Facilities Manager, Drilling Manager, Completions Manager, Production Engineering Manager, or VP of Operations. One technical manager may initiate the MOC and have another technical manager approve. Work may commence simultaneous to the creation and approval of the MOC; this should

be confirmed with the Emergency Approver prior to starting work. An Emergency MOC is subject to the same requirements for startup & PSSR.

5.3.3 Permanent Changes

A permanent change is one that will be in place for longer than six months. Each impacted department must be notified of the change request, given the opportunity to review the change, and approve or request revisions to the MOC. Permanent changes will follow the normal MOC process.

Frequent changes to some programs or systems may eventually be more practical to handle via a single “batch or fieldwide” MOC and/or update or creation of specific Standard Operating Procedures to prevent the need for frequent MOCs; some examples may include chemical program changes or automation bypasses for temporary (but common) occurrences outside of normal operating envelopes.

6.0 MANAGEMENT OF CHANGE

Changes to requirements listed within this practice require a formal MOC.

7.0 VIOLATIONS

Violations of this Practice and related policies and procedures by employees may result in disciplinary action up to and including termination. Violations of this Practice by contractors and other authorized third parties may result in the revocation of such party’s access to Crestone’s premises and/or electronic access to its systems, and the termination of such party’s contract for services.

8.0 PERFORMANCE METRICS

EHS&R and individual performance measures related to this practice, if any, are incorporated into year-end reviews.

9.0 TRAINING

All personnel involved with design, construction, operations and maintenance activities require a basic knowledge of change management. Initiators, approvers,

and any affected personnel will complete the Management of Change Training as part of their new hire orientation, every 2 years as required under the Crestone training plan, or when deficiencies are observed.. Training on the MOC process with the incident management system will occur per the individual training plan.

10.0 ASSOCIATED FORMS, DOCUMENTS, AND REFERENCES

10.1 Forms

- Pre Startup Safety Review Form
- New Hire Orientation

10.2 Documents/references

All supporting documentation of MOCs shall be uploaded into the incident management system. Exceptions to this must be approved by the MOC Coordinator. For further information on required supporting documentation, refer to Appendix B – MOC Documentation and Technical Content.

- Velocity EHS
- EHS Management of Change Practice
S:\EHS\Practices\Management_of_Change_Practice.pdf
- EHS Risk Matrix
S:\EHS\Forms\EHS Risk Matrix.pdf
- PSSR Form
S:\Operations\Production Group\PSSR Forms
- EHS Practices (LOTO, Hot Work, Confined Space, etc.)
S:\EHS\Practices
- Document Control for Legacy Encana (pre 2016) HZ Batteries
S:\Livelink\Project Engineering_Horizontal Batteries
- Document Control for Crestone Peak (2016+) HZ Batteries
S:\Document Control
- Well work Recommended Operation Procedures
S:\Operations\Recommended Operating Procedures



CRESTONE PEAK
RESOURCES

MANAGEMENT OF CHANGE PRACTICE

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10.3 Recordkeeping

- Crestone Shared Drives

11.0 REVISION HISTORY AND EXPIRATION

Note: Revision # should be listed in descending order starting with most recent version at the top

REV. #	DATE	Description/Modification	Revision Section (s)	Author(s)

12.0 ATTACHMENTS

There are no attachments associated with this practice.

Appendix A – Examples of Changes that require an MOC

- Addition of new process equipment at a facility, such as adding a compressor or pump.
- Separator swap where replacement separator is not identical in pressure rating, port configuration, size, etc.
- Modifications or minor additions to process equipment such as changing the type of back pressure regulator
- Addition of artificial lift such as rod pump or gas lift. Changes to artificial lift type/size.
- Changes to process control or automation equipment, such as changing high level set points, removing or altering high pressure shutdowns.
- Changes in critical process parameter operating limits outside of ranges specified in SOP.
- Alterations, additions or bypass to safety systems including interlocks, shutdowns, fire or explosion suppression.
- Changes in raw material or component specifications (e.g. control valve manufacturer) or sourcing related to surface equipment and automation
- Alterations, removal of or new connections to utilities systems (e.g. air, electrical, utility gas)
- Wellhead upgrades and double casing valve installations for frac protect
- Changes to chemical treatment program
- Non-standard use of Production Facilities (such as storing drilling or completions fluid).
- Alterations to storage tanks and valve trim that would affect the STEM (Storage Tanks Emissions Management) models of a facility.
- Changes to facilities that would affect the SPCC, e.g. containment and berms.
- Upgrading incoming electric service to a facility or well pad.
- Any engine swap (generator, pumping unit), even if it is LIK, due to the need to register the new serial numbers for air permitting.
- Chemical program changes outside of typical volume/dosage adjustments, including new product trials, significant reduction or elimination in batch or continuous treatments that have a fieldwide effect.
- Temporary or permanent bypass of ESD systems and shutdowns (e.g. fire eyes, LACT pump pressure/flow shutdowns, wellhead ESD bypass) – consideration should be given to batch MOCs, temporary or emergency MOCs.

What does not require an MOC? Changes that are “Low” on the CPR Risk Matrix. Examples may include:

- Any change already covered by a Crestone approved Standard Operating Procedure (i.e. Choke Changes; Separator swaps with the same separator (size, type/model);

- Installation of plunger lift (lubricator, controller) provided wellhead equipment is per Crestone standard wellhead equipment.
- Lock out, tag out;
- Changes to downhole equipment such as tubing type, pump type, etc.

Appendix B – MOC Documentation and Technical Content

The following detail is required (as appropriate) to be entered into the MOC application or attached to the MOC prior to routing for approval. This level of detail ensures that all aspects of the change have been considered.

Description

Describe in detail the change proposed. The following items shall be included, where applicable:

- pumping unit types, model numbers, drivers (electrical/gas) with hp/size – reference CPR PU catalog as needed
- pipe size/class, pipe construction (flowline, welded)
- applicable dimensions, setbacks, distances and depths (sound wall heights, spacing to wellheads or fired equipment, depth of buried lines)
- setpoint changes (pressure, temp, level, speed, flow)
- wellhead, vessel, tank pressure ratings
- process changes including fluid changes, fluid state changes
- changes on how operations will need to operate the equipment/facility
- physical equipment changes including elevation changes to flanges, access points, guarding to be added/removed/modified
- Permitting changes including update of BLM site security diagrams, municipality building code/permits verified, engines permitted
- Description of signage changes required, e.g. STEM headspace tanks, confined space entry, electrical hazard, trip hazard, moving equipment hazard, COGCC/BLM/battery signage requirements
- Community Relations Impacts including known sensitive areas or setbacks, increase in odor, noise, and light.
- Duration of the change for temporary MOCs. For temporary, must include target date at which the process must be returned to the original state or reviewed for extension.

Include description of specific startup checks required, including:

- Walk throughs
- PSSR
- Leak checks
- Function Tests

Impact to internal process & policy/guidelines should also be verified, including updates to

- Cygnet
- Production accounting
- Lease operators grease books
- SiteView, WellView
- SOPs – update or new
- Well/Allocation testing
- Recommended Operating Practice (Well work ROP)
- Update CPR PU/ALS catalog with new equipment

Justification

Describe rationale for completing the project including brief description of alternatives considered if applicable, including economic justification and payout, EHS&R justification, or sensitive area justifications.

EHS&R Impact

This section shall be completed for all MOCs. The EHS Matrix should be used as appropriate to quantify the level of risk associated with the change, pre and post. If a risk is found to be high or extreme, a risk assessment must be conducted to mitigate risks.

Environmental Impacts should be addressed and the following need to be considered

- Modification to SPCC
- Modification to STEM
- Air permitting verified

The following are examples of Health & Safety impacts or considerations that should be addressed

- Impacts to operators, maintenance, and support personnel
- New equipment guarding
- Increase in noise requiring additional engineering, administrative or PPE controls to protect personnel
- BTEX or other chemical exposure changes
- New electrical
- New odors
- Pressure hazards due to increase in pressure rating or MAOP

- New line strike hazards
- New fall or dropped object hazards
- Confined space entry hazards
- Cryogenic hazards or high temperature hazards

Attachments

The following is a list of suggested attachments that should be included with the MOC before submittal:

- Updated STEM model and verification
- P&ID redline showing spec breaks and all added, removed, modified fittings, valves, piping, vessels, automation and electrical equipment, above/below grade demarcations, piping notes (threaded, welded), pipe size, vessel and equipment information, cable size, MAWP.

Note

At the discretion of the Design Approver, and based on the project complexity, the redlined drawing may be submitted after the change is made in the field to allow for minor field modifications to the design; in this case, the P&ID update should be captured in the PSSR as an Engineering Action Item (not required for start up).

- Plot plans showing routing of flowlines and location of equipment additions/removals
- Spec sheets on new equipment (e.g. back pressure valves)
- Project Justification/Economics Workbook
- Marked up pictures
- Scope of work
- Commissioning Plan
- SDS for new chemicals
- License information and or regulatory requests

Appendix C – Roles, Responsibilities and Approvals

Initiator

The initiator shall complete all fields on the MOC form within the incident management system including the change description, justification, impact on EHS&R, change type, location of change, equipment involved, initiation date, target completion date, initiator, and MOC coordinator. The initiator should review the EHS Risk Matrix when determining the impact on EHS&R.

- Typically, an Engineer, but can also be the Automation Coordinator, Production Coordinator, Production Superintendent or Lead Operators.
- Creates MOC and includes all applicable detail and attachments and routes for approval.
- Coordinates PSSR
- Tracks MOC internal approvals and notifies entire distribution list once MOC is approved to start work.
- Answers Approvers questions and makes clarifications/changes to MOC as needed prior to approval. Communicates any updates/changes to MOC (after routing has commenced) to entire distribution list again.
- Attends PSSR and tracks action items to closure. Submits completed PSSR to EHS&R or document control after all action items are closed.
- Updates drawings, makes internal process changes, etc. to satisfy all MOC actions/requirements.

The initiator is responsible for communicating the intended change by sending an initial “MOC Routed” email. Not everyone affected by the MOC may have access to the MOC system. Once initiated, all MOCs (including temporary) are to be summarized in an email to notify all affected parties.

This email shall include (can copy from MOC application): Description, Justification, EHS&R Impact, Hyperlink to MOC, Comment on whether a PSSR is Required, The design approver's name, and all MOC approvers names. MOC attachments may be included (drawings, economics, specifications) but are not required.

The Subject line of email shall begin with “MOC ROUTED: Battery/Well Name and Short Description”. The following recipients shall receive this notification on MOCs (Applicable MOC types):

- Community Relations (All MOC's)
- Air Quality Supervisor and Field technician (All)
- Operations Superintendent, Production Coordinator and Lead for applicable well/battery (All)
- Production Engineering Manager, Production Engineering Lead, Production Engineering Tech, Production Engineer for area (All)
- Other affected Facilities and Production Engineers or Manager (All)
- Automation Coordinator and all Electrical & Automation Techs (All)
- Supply chain via “Inventory@Crestonepr.com” (All)
- All Maintenance Technicians (All)
- Surface Landman (All)
- All EHS&R Advisors (All)
- Regulatory Analyst for affected area/wells/battery (All)
- Mineral Land (wells shut in or as it would affect royalty)
- Midstream Manager (changes to sales points, quality, content, refracs)
- Environmental Supervisor and Specialist (Wildlife impacts, spill related)
- Workover superintendent and Engineer (ALS Installs)

Before implementing a qualified change that has been reviewed, the following shall occur;

- Affected personnel involved in operating and maintaining a process, and those whose job tasks shall be affected by a change in the process, shall be informed of and trained (where applicable) in the change.
- Safety, operating, maintenance, and emergency procedures shall be updated and, if required, a Pre-Startup-Safety Review (PSSR) checklist shall be completed.

After implementing a qualified change, the following shall occur;

- Process Safety Information shall be updated
- The MOC shall be closed and signed off as complete.

Design Approver

A review by a design approver must take place. This is to ensure the information provided is adequate, accurate, and can be operated safely. They review the MOC to ensure content meets the standards of the MOC Practice and serves as the first approver. The MOC will not proceed to the remaining approvers until the Design Approver approves.

The design approver will determine if a risk assessment is required based on the risk provided by the initiator. If the design approver determines a risk assessment is required, it shall be completed prior to commencement of work.

The design approver is an engineer, subject matter expert, or department manager and is typically the Initiators supervisor. The initiator and design approver may be the same person provided all requirements for the design approval have been met. However, it is recommended that the same person not be the design approver whenever this can be avoided.

If revisions are requested by design approver, e-mail must be sent by initiator to MOC coordinator once revisions are made to notify of resubmittal.

Note

The current Velocity system does not notify the MOC coordinator when an MOC is resubmitted with changes. An e-mail should be sent to the MOC coordinator alerting them of the revision.

MOC Approvers

After design approval the MOC moves to the MOC Approvers. Once the MOC Approvers have all approved, the MOC is approved to start work.

Each MOC Approver shall review the MOC and associated material; request additional reviewers, if required; provide or verify the applicable specifications or standards; request revisions to the MOC through the incident management system, if required; and/or request more information from the initiator, if needed.

Approvers are typically selected to include the supervisors of the affected Operations disciplines who will be executing the work and then Operating the

resulting equipment, facility, process etc.

Note

The MOC Initiator and Design Approvers shall NOT also be MOC Approvers.

Approvers are typically selected from the following Roles:

- Air Quality Supervisor
- Production Coordinator
- Maintenance Technician
- Automation Coordinator
- Regulatory Analyst (New ALS Installs & Equipment Additions)
- Community Relations Coordinator (New ALS Installs & Equipment Additions)
- Others as appropriate

The MOC approvers are decided by the MOC Initiator and verified by the MOC Design Approver. The MOC Approvers shall consult with other knowledgeable individuals in their department as needed, and review the MOC for technical accuracy, EHS&R impacts and practicality (cost, timing) and provide approval only once they are satisfied with the design and understand the change. They should consult with the MOC Initiator as needed for clarification and reserve Rejection for MOCs that will not be approved (vs those that need tweaks). They may request that other Approvers be added.

Appendix D – Pre-Startup Safety Review (PSSR) Guidelines

Requirements for PSSR

A Pre-Startup Safety Review is required on all non-routine MOCs or those that involve significant physical changes in the field.

A PSSR is not required when risk is determined to be low using the Crestone EHS&R Risk Matrix, including when the project is routine, and/or involves only 1 discipline. In these cases, a startup verification may still occur and should consist of either project pictures (reviewed by initiator and all MOC approvers), site walkthrough with Operations, and/or a function test.

Note

The determination for PSSR requirement is made by the initiator and approved by the Design Approver during the initial MOC approval process.

Examples of MOCs that may not require a PSSR:

- Casing Blowdown Tie-In
- Equipment Removals
- wellhead upgrades
- STEM headspace tank lockout
- Replacing single section of failed buried bypass line with surface line.

Temporary MOCs

Temporary MOCs are subject to the same PSSR requirements.

When returning a project to its original state after a temporary MOC, another PSSR may be required. This should be clarified ahead of time in the MOC.

When returning a project to its' original state, an e-mail should be sent out to original e-mail recipients stating the intention to revert to original state.

Scheduling the PSSR

A PSSR will be scheduled via the MOC Initiator once the maintenance/construction work begins.

Automation, Construction and Electrical should be notified (e.g. via courtesy call) prior to scheduling to confirm safety critical work will have been completed prior to PSSR.

The initiator may move the PSSR back if there are significant delays or scope changes, however it is recommended that a PSSR still be conducted on schedule and that Level 1 Action Items be utilized to capture “Critical for Startup” actions.

Invitees should be all Approvers or representatives from their departments. It is recommended that others be included as needed. Consult with the original notification email distribution list for potential other participants. EHS&R is to attend all PSSRs.

PSSR Action items

Action items are to be captured by the MOC Initiator on the PSSR form during the PSSR and assigned category 1, 2, or 3 and assigned an owner and completion date. See PSSR form for specific guidance on categorizing action items.


Category 1 action items may require another PSSR or site walkdown to review prior to start-up. This should be clarified initially when creating a category 1 action item and recorded on the PSSR form for that item.

The PSSR form shall be turned into Document Control and the MOC Coordinator notified, no later than 30 days from the PSSR date. The MOC Initiator shall track completion of the Action Items. The MOC Initiator shall close all action items within 30 days and turn the PSSR form in with action items closed. Any action items not closed within 30 days shall be tracked in Velocity. The MOC Coordinator shall create these action items in Velocity.

PSSR Form Updates

The PSSR form may be updated upon anyone’s recommendation. Changes to the form must be communicated to all departments, including document control. Changes to the form must be approved by the Operations Superintendent. Document Control is responsible for updating the forms on the network drive. It is the MOC Initiators responsibility to ensure they are using the latest PSSR form during the PSSR.

Appendix C

 CRESTONE PEAK <small>RESOURCES</small>	CRESTONE PEAK PRODUCTION PRE-STARTUP SAFETY REVIEW CHECKLIST	
	Owner: Crestone Operations / EHS	Date last revised: 7/30/2020

Facility Name: _____ **Wells Included:** _____

Project Description: _____ **MOC #:** _____

Start-up Authorization: _____ **Date:** _____

(Superintendent or Delegate signature required for start-up to proceed.)

No.	<ul style="list-style-type: none"> Red = Required to be completed for start-up. Yellow = Required to be completed prior to release of full time flowback supervision or 24 hr. operator. Green = Require complete within 30 days of start-up. 	Initial YES	Initial NO	N/A	If No, Action Item #
ENGINEERING					
1	Have the appropriate engineering and design codes/standards including Crestone SARP's and best practices, COGCC & CDPHE rules & regulations, state, county and local stipulations for permitting been incorporated in the design?				
2	Has a P&ID walk-through been completed to ensure the work was completed as engineered?				
3	Has the engineered equipment procured been fabricated to Purchase Order specifications?				
4	Have all appropriate P&IDs been red lined with any changes from what was defined in the initial MOC?				
5	Has all new inventory been tagged and/or material transfers been completed?				
6	Have all other teams (if necessary) been notified of project status? (IT, prod accounting, regulatory, community relations, other engineering departments, etc.)				
OPERATIONS					
1	Have applicable or special SOP's specific to this facility been developed and training provided to the appropriate personnel?				
2	Have all route owners/supervisors been made aware of the change and status of the project/facility construction? (Email, handover notes, etc.)				
3	Has project been constructed in line with operations best practices? (Appropriate blowdowns, ergonomics, access/egress, etc.)				
4	Is construction complete and the project/facility acceptable for handoff to the Production Operations team?				

No.	<ul style="list-style-type: none"> Red = Required to be completed for start-up. Yellow = Required to be completed prior to release of full time flowback supervision or 24 hr. operator. Green = Require complete within 30 days of start-up. 	Initial YES	Initial NO	N/A	If No, Action Item #
AIR / ENVIRONMENTAL					
1	Have all necessary air permits and required documentation been completed?				
2	Have any applicable STEM models and documents been modified and approved?				
3	Is all necessary containment in place and does it meet volumetric requirements?				
4	Have all lines been walked down with FLIR camera (or other gas detection device) to ensure there are no gas leaks?				
SAFETY					
1	Are adequate safety warning and caution signs in place (H ₂ S, warning signs, NFPA Placards, etc.), per the sign standard?				
2	Are appropriate walking and working surfaces, stairs and crossovers in place?				
3	Have all confined spaces been evaluated, labeled and added if needed?				
4	Have all other OSHA requirements and/or regulatory requirements, in regards to EH&S, been met?				
CONSTRUCTION / MAINTENANCE					
1	Has this facility been constructed per engineering design, site plan, and P&ID's provided by Engineering?				
2	Has Crestone received copies of appropriate inspection & registration documentation for pressure rated vessels. And do the MAWP and U-1A plates match each other and pressures specified in purchase order?				
3	Have all appropriate (Hydro, N ₂) integrity pressure tests been performed on equipment?				
4	Have all flanges have been checked for proper gasket installation and bolt torque?				
5	Have all new connections requiring welding been properly inspected?				
6	Has all above ground piping and equipment been guarded from vehicular traffic as necessary?				
7	Is equipment and line labeling in place?				
8	Has the facility been cleared of construction equipment, surplus equipment, tools, unused parts, and empty drums that could impede or affect start-up?				
9	Has temporary or permanent fencing been installed around all above ground equipment?				

No.	<ul style="list-style-type: none"> Red = Required to be completed for start-up. Yellow = Required to be completed prior to release of full time flowback supervision or 24 hr. operator. Green = Require complete within 30 days of start-up. 	Initial YES	Initial NO	N/A	If No, Action Item #
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AUTOMATION - MEASUREMENT

1	Have all ESD's, control valves, pressure, level, and temperature devices been tested and calibrated?				
2	Have all loop checks and instrument calibrations have been completed?				
3	Are Cygnet and data communications links established and is facility set up in DJ Cygnet Network?				
4	Has the EFM check meter been calibrated and all applicable correction factors pre-loaded into the EFM?				

AUTOMATION - ELECTRICAL

1	Has the incoming voltage been verified, conductor size verified and high pot testing been completed?				
2	If applicable, has the generator been sized and installed as specified in engineered drawings?				
3	Is electrical equipment properly labeled?				
4	Have all Construction, Electrical, Building, Etc. permits & inspections (where required) been followed, updated, and approved as necessary?				
5	Has the design incorporated the minimum required standards, best practices and code requirements, including grounding/bonding and area classification, where applicable?				

ACKNOWLEDGEMENT

The undersigned certify the equipment included in this process has been constructed as designed, undergone a complete pre-startup safety review and checkout, and is now ready to start up.

Responsibility	Printed Name	Signature	Date
Engineering			
Operations			
Air & Environmental			
Safety			
Construction - Maintenance			
Automation - Electrical			
Automation - Measurement			

NOTE: Once location walk-down is complete, sign-up authorization has been obtained, turnover form completed, the location may be turned over to the production team for commissioning or return to production.

ACTION PLAN / COMMENTS

(Priority Code Legend: 1 –Required for Start-up 2 - Urgent 3 - Routine)

Note: Forms should be returned to safety/document control and action items that are not closed within 30 days need to be tracked in Velocity EH&S.

#	ITEM	Priority	Person Assigned To Task	Target Date	Date Completed
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					

Appendix D



RISK MANAGEMENT PRACTICE

DATE OF ISSUE:	SUPERSEDES:	Control Number: 1.03Ca
EFFECTIVE DATE: Aug 27, 2020	EXECUTIVE OWNER: Danny Knutson	

ENDORSEMENTS:

NAME	TITLE	SIGNATURE	DATE
David Stewart	Vice President of EHS&R	<i>David Stewart</i>	Aug 27, 2020
Danny Knutson	EHS Manager	<i>Danny Knutson</i>	Aug 27, 2020

1.0 PURPOSE

This practice outlines the process for managing EHS&R risk.

To assess EHS&R risks, Crestone employees must use the Crestone EHS&R Risk Matrix.

2.0 APPLICABILITY AND SCOPE

This practice applies to all Crestone Peak Resources employees at all locations owned or operated by Crestone. Risk management in this practice applies to all types of environmental, health, safety, and regulatory (EHS&R) risks in all activities undertaken by or on behalf of Crestone.

3.0 ACRONYMS AND DEFINITIONS:

Acronyms

CRESTONE	Crestone Peak Resources
CFR	Code of Federal Regulations

EHS&R Environmental, Health, Safety & Regulatory

Definitions

There are no definitions outlined in this procedure.

4.0 RESPONSIBILITIES AND AUTHORITY

Risk	Responsibility
Risk assessment initiation	Project lead
Risk identification	All project stakeholders
Risk documentation	EHS&R
Risk assessment	All project stakeholders
Risk assessment team	To be a member of a risk assessment team, an individual must have sufficient experience, knowledge, skills, and ability related to the risk being evaluated or as requested by the individual in charge of the project. Environmental, health, and safety representatives should always be included on the risk assessment team.
Risk mitigation treatment strategies	Project lead
Risk mitigation planning	Department Supervisors
Risk mitigation approval	Department Supervisors
Risk mitigation response	Department Supervisors
Risk reporting	Department Supervisors
Medium risk activity	Department Supervisors. Team approval required to continue medium risk activity.
High risk activity	VP or higher approval required to continue high-risk activity. All measures should be taken to prevent work with high risk.

Extreme Risk Activity	When identified, work must stop immediately and be mitigated to medium or lower level before work resumption.
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5.0 PRACTICE DESCRIPTION

5.1 When is a risk assessment conducted?

Various factors weigh into the decision to perform a risk assessment, such as the types of activities or projects, the scope of the activities, and whether they are new or changes to existing activities. In addition, risks must be distinguished from hazards, which are managed differently. Figure 1 clarifies when risk assessments are completed by comparing their timing with hazard management throughout the lifecycle of a project. Some of the tools associated with managing hazards and risks include the EH&S Risk Matrix, Job Safety Analyses, and Hazard Identifications. Risk assessments are completed during planning and design.

Risks are assessed during job execution through the MOC process. Finally, a risk assessment need determination (RAND) is completed to determine if a risk assessment is necessary.

This section provides some guidance on when to conduct a risk assessment. However, each department should define clear parameters for their teams on when to conduct a risk assessment.

5.1.1 What activities should be assessed for risks?

Risk assessments are completed on proposed or planned activities during the planning and design phase of projects when new structures, projects, equipment, and infrastructure are proposed for construction. Figure 1 illustrates the lifecycle phase during which risk is assessed.

5.1.2 Managing change

If changes are made to a project or activity before final design, then the risk assessment (if completed) is revised taking the change into consideration. If changes are made to a project or activity after final design, during construction, or during

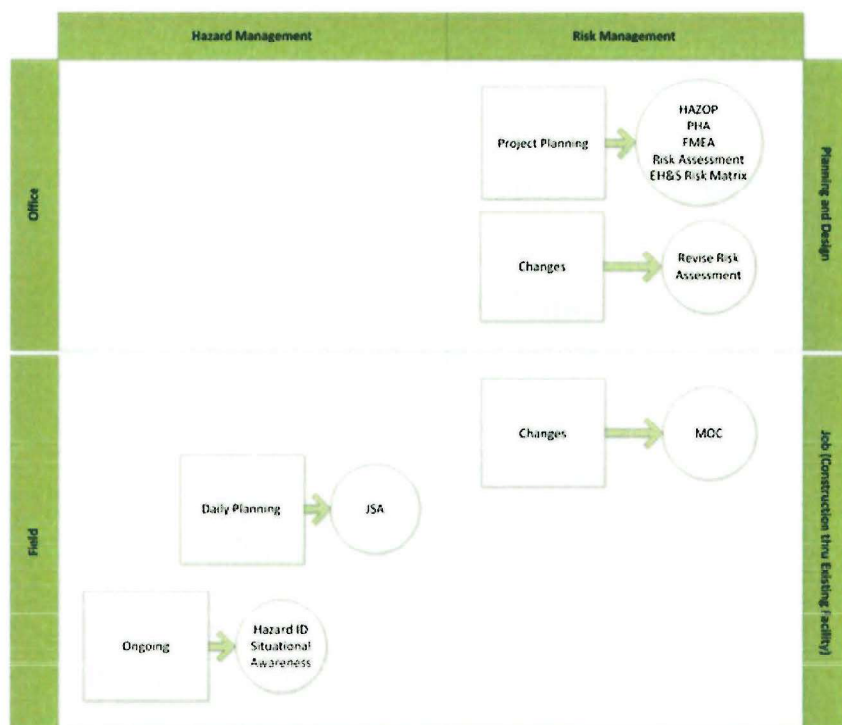
the job, MOC is conducted; that is, the MOC process is conducted on new processes, structures, infrastructure, or equipment introduced into existing environments considered ordinary work conditions. Risk should be assessed during the MOC process as long as the *Crestone EH&S Risk Matrix* is used.

5.1.3 Is there a difference between risk and hazards?

Risk and hazards have two different meanings:

- **Risk** is defined as the chance of something happening, measured in terms of probability and impact that may adversely affect the achievement of Crestone's strategic or major business objectives.
- **Hazard** is defined as a source, situation, or act with a potential for harm or impact if not controlled. An uncontrolled hazard can result in harm or impact.

Figure 1. Risk management versus hazard management



5.1.4 Risk assessment need determination

If a project or activity meets the requirements given in this section, a RAND shall be completed to determine if a risk assessment is required. The *Risk Assessment Need Determination* form was created to determine the need for a risk assessment. The RAND form puts the *Crestone EH&S Risk Matrix* into a checklist that helps the user identify risks and their severity. If the user identifies only minor risks, then a risk assessment is not required.

The *Risk Assessment Need Determination* form is completed before conducting a risk assessment using the following steps:

- 5.1.4.1 Identify the project or activity (e.g., drill and complete a well, install a compressor, or construct a pipeline).
- 5.1.4.2 If the project or activity is a change to an existing or previous project, then complete the MOC process instead using the *Management of Change Practice (1.02Ca)*. A RAND may be conducted as part of the MOC process if risks are involved with the change.
- 5.1.4.3 Prepare the Authorization for Expenditure (AFE), if applicable.
- 5.1.4.4 Select the risk assessment team with appropriate skills and experience to conduct the RAND (See Section 4.0 for team member requirements).
- 5.1.4.5 Break the project down into major phases and complete a RAND checklist for each phase.
- 5.1.4.6 Conduct a RAND using the RAND checklist as follows:
 - (a) Estimate impact on people, the environment, company assets, reputation, and company budgets and deliverables.
 - (b) If any of the activities associated with the project or activity identified within the RAND are considered to be critical, serious, or moderate risks, then go to Step 2 on the RAND form.
 - (c) No risk assessment is required if all risks associated with the project or activity are considered minor and the project or activity can proceed upon approval of the RAND by the leads of construction, drilling, completions, operations, land, facilities, and EHS&R.

The following options are available for the risk assessment team if critical, serious,

or moderate risks can occur because of the project or activity:

- First, the project team determines if similar projects of scope and nature have been completed within the last year by contacting EHS&R. All completed risk assessments will be turned in to EHS&R and filed in a risk assessment folder for each department.
- If similar projects have been completed, the project team may review the risk assessment completed for that project and ensure that all mitigation plans developed for that project are used throughout all phases of the proposed project or planned activity (See Section 5.4).
- If no risk assessment has been performed for a similar project or activity, or if a similar assessment has not been completed within the past year, then the project team should complete a risk assessment as outlined in Section 5.2.

5.2 Risk assessment

Crestone's risk assessment process is used to evaluate the consequence(s) resulting from a proposed or planned activity that can potentially cause or create negative impact(s) to people, the environment, assets, corporate reputation, company budgets, or deliverables. The distinct purpose of this process is to help develop mitigation strategies to lessen or reduce—if not totally eliminate—the potential adverse consequences inherent in a proposed project or activity. This is accomplished by the development of a risk assessment team, the members of which are identified by the team, group, or field lead and meet the requirements given in Section 4.0.

The *Failure Mode Effects Analyses Form* was developed as a tool for Crestone to assess risks. However, depending on the nature of the project, other forms of risk assessment tools can be used, such as Hazard and Operability Analyses (HAZOPs) and Process Hazard Analyses (PHAs), as long as the *Crestone EH&S Risk Matrix* is used as the basis for the identification of risk levels in these alternative tools.

The following steps are used when using the *Failure Mode Effects Analyses Form*, which is the assessment tool developed for Crestone:

1. If you are a first time user, print this spreadsheet and ask for help from an experienced co-worker. (Tip: review the FMEA Example tab)
2. Determine the input(s) or process steps you will be analyzing for risk(s) and enter them in the template.

3. Enter a potential hazard or failure in what you are evaluating. Put another way, how can this process go wrong, or fail?
4. Determine one potential effect of the hazard. (Tip: If there are multiple effects, evaluate one at a time, making a new row for each effect)
5. Consult the "SEV" (Severity) tab to determine and enter an appropriate number for the Severity rating (1-10) - enter the rating in the FMEA Form tab. (Tip: Review each column, enter the HIGHEST rating in the FMEA FORM tab)
6. Determine the root causes of how a hazard can occur. Describe in terms of something that can be corrected or controlled. (Tip: use the "5-Why" technique (keep asking "why" a hazard / failure occurs) to get to the root cause of the hazard or failure)
7. Determine how often the potential will exist to create the hazard. Consult the "OCC" (Occurrence) tab to find the number for the Occurrence rating (1-10) - enter the rating in the FMEA Form tab. (Tip: select the column which best fits the process or product, and select the rating)
8. Determine what controls/safe guards/checks are in place to detect or prevent the hazard you are evaluating
9. Determine how likely the hazard can be detected or prevented based on the determined controls/safe guards/checks. Consult the "DET" (Detection) tab to find the number for Detection (1-10) - enter the rating in the FMEA Form tab. (Tip: select the column which best fits the process or product, and select the rating)
10. Complete steps 2-8 until the team is satisfied all failure modes, potential root causes and detection ability have been exhausted.
11. Review the "RPN" (Risk Priority Number) and "Risk Matrix Level PRIOR to Mitigation" columns. If the Risk Matrix Level PRIOR to Mitigation is above Low, complete a mitigation plan.
12. Brainstorm and select mitigation plans. Meaning, think of actions which will mistake proof or at least decrease the Risk Level to "Low." Enter names of those responsible for completing the mitigations, and what date mitigations will be completed by.
13. AFTER mitigations have been implemented, document actions actually implemented and the implementation date
14. Re-evaluate and enter the new Severity, Occurrence, and Detection ratings AFTER mitigations have been implemented.
15. Review the "RPN" (Risk Priority Number) and "Risk Matrix Level AFTER Mitigation" columns. If the "Risk Matrix Level AFTER Mitigation" is still

above Medium, repeat steps 12-14 and follow instructions listed on the "Risk Reporting" table located on the "Risk Level & Reporting" tab.

16. Send a copy of the completed FMEA form to the department lead and EHS&R.
17. EHS&R will upload the completed FMEA form. If mitigation action items have not been completed, the RA will be saved as "IN PROGRESS." Inform the RA Administrator when all mitigation action items are complete.
18. Categorize the risk in terms of low, medium, high, and extreme (Figure 3) as show on Crestone's Risk Matrix (Note, this is automated in the worksheet). Corresponding actions required for each risk level are provided on Figure 3.

Figure 3. Risk Levels and associated actions.

Extreme – Stop activities. Work cannot proceed until the risk is reduced to a lower level.
High – Extensive risk controls / mitigation measures must be implemented and VP approval is required to allow work to proceed. Efforts to reduce risk to a MEDIUM or LOW Level should be undertaken.
Medium – Risk controls / mitigation measures must be implemented to allow work to proceed. Efforts to reduce risk to a LOW level should be undertaken.
Low – Some risk controls / mitigation measures may be justified. Represents an acceptable level of risk.

5.3 Risk mitigation

All unacceptable risks must be mitigated to as low as reasonably practical. All mitigation measures intended to reduce risk shall be tracked to closure along with any triggers of mitigation measures. See Section 5.4 for tracking and reporting mitigation measures. Risk assessment representatives must track mitigation measures to closure using corrective actions.

Risk mitigation involves three steps:

- identifying the risk treatment strategies, which are various approaches to reducing the probability or impact of an adverse risk;
- creating a mitigation plan that includes triggers to manage the risk should it occur; and

- modifying the AFE to include the cost of risk mitigation measures, if necessary.

5.3.1 Risk treatment strategy

For each identified risk, one of the following treatment strategies must be used:

- **Avoidance.** Change the project to avoid the risk: change scope, objectives, location, etc.
- **Transference.** Shift the impact of a risk to a third party (such as a contractor), who is qualified to handle the risk. Crestone is still responsible for the overall risk of the project, but the qualified contractor is responsible for the job task.
- **Mitigation.** Take steps to eliminate or reduce the probability or impact of a risk: take early action, close monitoring, more testing, etc.
- **Acceptance.** Simply accept that this is a risk. When choosing acceptance as a response, the risk assessment team is stating that, given the probability of occurrence and the associated impact to the project that results, the project will not take any actions to control or eliminate the risk and will accept the cost, schedule, scope, and quality impacts if the risk event occurs.

The project lead is responsible for selecting the treatment strategy or strategies for each risk. The project lead will need the best possible assessment of the risk and description of the treatment strategy in order to select the right response for each risk. The probability of the risk event occurring and the impacts will be the basis for determining the degree to which the actions to mitigate the risk should be taken.

5.3.2 Risk mitigation planning

Risk mitigation planning is the act of preparing a plan, or a series of activities, to address a medium or greater risk level. Having a mitigation plan in place forces the project team to think in advance as to a course of action if a risk event takes place. The following are the steps necessary to develop a mitigation plan:

- Identify the mitigation plan tasks (or steps) that can be performed to implement the mitigation strategy.
- Identify and document start and stop triggers for each mitigation task. A start trigger is an event that would activate the mitigation plan, while a stop trigger

is the criteria to resume normal operations.

- Identify the necessary resources, such as cost, equipment, and labor.
- Develop a mitigation plan schedule. Because the date the plan will be implemented would be unknown, this schedule should be in the format of day 1, day 2, day 3, etc., rather than containing specific start and end dates.
- Define emergency notification and escalation procedures, if appropriate.
- Develop mitigation plan training materials, if appropriate.
- Review and update mitigation plans if necessary.
- Publish the plan(s) and distribute the plan(s) to management and those directly involved in executing the plan(s).

Crestone has made available as a tool the *Failure Mode Effects Analyses* form, which can be used to list mitigation action items. However, risk mitigation measures must be tracked to completion.

5.3.3 Using similar mitigation plans

If a risk assessment has been completed within the last 3 years for a similar project, then that risk assessment may serve as the basis for mitigation on a new project. However, each activity that was evaluated shall be reviewed to determine if there is a change in risk impacts or probability of occurrence associated with the new project. If the review determines that the risk impact or probability increases, then enhanced mitigation shall be developed and added to the risk mitigation plan. Examples of items that may increase a risk impact or probability of occurrence on a new project include the following:

- increased population density;
- increased well density;
- steep terrain; and
- increase in formation or operating pressures.

Newly identified risks can be evaluated to determine appropriate mitigation measures. These risks should be attached and included in the risk mitigation plan.

5.4 Tracking and reporting

As project activities are conducted and completed, risk factors and events will be

monitored to determine if, in fact, trigger events have occurred that would indicate the risk is now a reality. Based on trigger events that have been documented during the risk mitigation process, the project lead has the authority to enact mitigation plans as deemed appropriate. The project lead will enact and direct day-to-day risk mitigation activities. However, large-scale mitigation efforts, such as those that encompass an entire field or large area, should be initiated by the VP, Operations. Examples of large scale mitigation efforts may include the following:

- mitigating the effects of a flooding in a field or area;
- mitigating the effects of oil and gas activities on a community;
- mitigating vandalism/theft in a field or large area; or
- mitigating road damage due to activity increase in a field or area.

Mitigation plans, once approved and initiated, should be added to the project work plan, if developed, and be reported along with all other project activities. Risk management is an ongoing activity that will continue throughout the life of the project. This process includes continued activities of risk identification, risk assessment, planning for newly identified risks, monitoring trigger conditions and mitigation plans, and risk reporting on a regular basis. Project status reporting contains a section on risk management, where new risks are presented along with any status changes of existing risks. Some risk attributes, such as probability and impact, could change during the life of a project and this should be reported as well.

In addition, the risk assessment team should assign a representative to document mitigations measures (as action items) so that they can be tracked to closure and monitor them throughout the process.

5.5 Processes to address immediate unforeseen risks

If any individual identifies an immediate risk, he or she shall immediately notify the project lead, who will assess the risk situation. If required, the project lead and team lead will identify a mitigating strategy and assign resources as necessary. The project lead will document the risk factor and the mitigating strategy. Risk identification, analysis, and mitigation methods and roles and responsibilities of those individuals involved in the risk activities will all be recorded.

6.0 MANAGEMENT OF CHANGE

Changes to requirements listed within this practice require a formal MOC.

7.0 VIOLATIONS

Violations of this Practice and related policies and procedures by employees may result in disciplinary action up to and including termination. Violations of this Practice by contractors and other authorized third parties may result in the revocation of such party's access to Crestone's premises and/or electronic access to its systems, and the termination of such party's contract for services.

8.0 PERFORMANCE METRICS

EHS&R and individual performance measures related to this practice, if any, are incorporated into year-end reviews.

9.0 TRAINING

Training will be completed as required by the EHS Annual Training Schedule.

10.0 ASSOCIATED FORMS, DOCUMENTS, AND REFERENCES

10.1 Forms

- Risk Assessment Need Determination
- Failure, Mode, Effects, Analyses (FMEA) Form
- Job Safety Analyses

10.2 Documents/references

- Crestone EH&S Risk Matrix

10.3 Recordkeeping

- Crestone Shared Drives

11.0 REVISION HISTORY AND EXPIRATION

Note: Revision # should be listed in descending order starting with most recent version at the top

REV. #	DATE	Description/Modification	Revision Section (s)	Author(s)

12.0 ATTACHMENTS

There are no attachments associated with this practice.